

1996

Integrating telecommunications technologies into rural economic development: community and telephone company interaction and cooperation in Iowa

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**Integrating telecommunications technologies into
rural economic development:
Community and telephone company interaction and cooperation in Iowa**

by

Joy Annette Gieseke

**A thesis submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of
MASTER OF SCIENCE**

Department: Sociology

Major: Rural Sociology

Major Professor: Peter F. Korsching

Iowa State University

Ames, Iowa

1996

Graduate College
Iowa State University

This is to certify that the Master's thesis of
Joy Annette Gieseke
has met the thesis requirements of Iowa State University

- Signatures have been redacted for privacy

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DEDICATION

This thesis marks a milestone in my decision to return to school. I have received a tremendous amount of support in this endeavor, but I have to especially recognize that of my parents and my children. This thesis is dedicated to them - to my parents, Richard and Alvera Rosgaard, who though they never were given the opportunity to fulfill a desire for higher education, have taught me to value it. My children, Heather and Nathan, have made sacrifices so that this could become a reality for me. It is my hope that they have learned the importance of education from me. I owe them all a great debt of gratitude.

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CHAPTER ONE. INTRODUCTION

1.1 Background of the Study

There has been widespread discussion about the potential of telecommunications technologies as a tool for economic development in rural communities. Because new and emerging telecommunications technologies provide the capability of instant global communication, they can reduce location barriers that can impede rural economic development. Furthermore, the societal transformation into an information age means that the provision of advanced telecommunications technologies has become almost essential if rural communities are to remain competitive.

Allen and Dillman (1994) have discussed a social and economic transition that has moved twentieth century America from an age of community control to one of mass society and is now evolving into a society classified as the information age. The community control era that dominated social and economic organization at the beginning of this century represents a time when the local community held primary influence over the lives of people. This era was gradually replaced by the mass society age, characterized by increasing importance of ties outside the community. By mid-century, the mass society came to be the dominant force in American life. At the peak of the mass society age, technologies were developed that represented a shift toward the information age. From the introduction of television in 1950, technological innovations have continued to bring about changes in the structure of

society. As we move into the twenty-first century change is accelerating, and local ties are no longer the driving force behind individual and community life. The impacts of this transition are not yet fully understood, but they will alter the social and economic fabric of communities. "The information era, just now in its early stages, is the result of forces that destroy hierarchy and strengthen people's direct ties to the global economy, irrespective of national or community ties" (Allen & Dillman, 1994:29).

Kranzberg (1985:37) compares this transition to the industrial revolution, which he says marked a "...truly revolutionary transformation of society because it changed where and how people worked, lived, thought, played and prayed". He predicts that the transformation to an information age will also be "...revolutionary in its effects upon our society". Furthermore, he has predicted that consequences will be "...mixed, unevenly distributed, assimilated, and modified at uneven rates" (Kranzberg, 1985:50).

The economy of rural communities struggled through hard times, especially in the 1980s, and predictions for the future well-being of many rural citizens remain uncertain. The traditional industries of rural America, agriculture and other extractive industries, along with manufacturing, continued to show rates of decline throughout the decade. Transitions have occurred beyond cyclical recessions. The structure of the rural economy has been permanently changed as the existing economic base supports only a fraction of the population of the rural community (Parker, 1992). A means of countering these trends and solving problems of

economic vitality in rural communities has been the efforts to attract businesses that are information-intensive. These include firms specializing in telemarketing, mail order fulfillment, customer support and data entry (Parker, 1992).

The usefulness of telecommunications as part of a strategy for rural economic development continues to be debated. Some people are heralding these technologies as the best thing that has ever happened to rural communities. For example, in a *Newsweek* article, entitled "We've Seen The Future; It's In Iowa", Ted Chapler, the former executive director of the Iowa Communications Network (ICN), is quoted, "Soon the network will be as much a part of the Iowa landscape as the grain elevator" ("We've Seen the Future," 1994:55). The ICN is a statewide fiber optic system financed and operated by the State of Iowa. It was developed primarily for educational purposes, with access restricted initially to schools, public and private colleges and universities, libraries, the National Guard, state government offices and hospitals. Local governments currently are not authorized to use the system and private uses are specifically excluded. In the first phase of the project, completed in 1993, one point-of-presence (POP) was established in each of Iowa's 99 counties. This POP was located at one of the high schools or colleges in each county. Currently, plans are progressing for connecting additional schools and libraries to the system. It has been suggested that telecommunications may provide the impetus for the survival of many rural institutions, such as hospitals and schools, which may otherwise become victims of a declining population base. Improvements in telecommunications technologies may encourage economic development in rural

communities by removing the location barrier that constrains business and industry. This optimistic assessment of the potentials offered by telecommunications technologies is shared by many, leading one researcher to represent these technologies as "...not merely another channel of entertainment and diversion, but new tools for increasing productivity and participation" (Hudson, 1987).

However, there are others who warn that new technologies may result in selective economic development, much the same as happened when the interstate highway system (and the railroad before it) benefited only those communities fortunate enough to be in the path of progress. Indeed, what we are now facing in Iowa is the possibility that the ICN (which was to connect all schools to a communications network) may not be able to fulfill those promises. What may happen is that the communities with the greatest need will be the ones who get left behind. If that happens, the result will be a widening of the gap between communities. In addition, there may be a widened gap *within* rural communities if the information for the adoption of telecommunications technologies is not accessible to all community residents.

Despite uncertainty about the value of telecommunications for economic development, the information age is a reality and rural communities are a part of the transition. Their future vitality depends at least to some degree on their being able to keep up with technological innovations. This thesis discusses one aspect of the process through which the adoption of telecommunications technologies can be accomplished.

Economic development has become commonplace in rural communities; as the structure of their economy undergoes changes and the struggle to compete intensifies, many if not most of these communities find that they have to intentionally promote development. Profitable businesses, good schools, health providers, and physical infrastructure provide only a portion of the amenities necessary for communities to successfully engage in economic development. Equally important are the factors which account for the social stability of communities. A number of researchers have found that communities are more successful at sustainable economic development when the building and maintaining of human and social infrastructure are included in the effort (Flora, 1992; Luloff & Swanson, 1995; Mulkey & Beaulieu, 1995).

Although access to telecommunications infrastructure can increase the physical capital of rural communities, these technologies, by themselves, cannot mediate all of the problems in rural communities. Other forms of community capital are necessary for successful economic development. It is generally agreed that in addition to physical infrastructure, the degree to which communities are successful at sustaining economic growth is determined by financial capital, human capital, and social capital. Physical capital refers to the tangible objects in a community - infrastructure components such as roads, water and sewer systems, buildings, etc. Financial capital is the monetary resources available to a community and includes stocks, bonds, market futures, and credit, as well as money. Human capital refers to the knowledge, skills, and health of the population. Social capital is defined as

the collective norms of reciprocity and mutual trust (Flora & Flora, 1992). The social capital segment of that economic development formula is the focus of this study.

One element of social capital is the degree of cooperation, as exemplified by widespread participation in community activities and the capacity to identify and work toward common goals. Flora and Flora have found that communities with strong networks, both within and outside the community, are more successful entrepreneurial communities (Flora & Flora, 1992). Social capital, the degree to which mutual trust and cooperation exists between different actors in a social structure, has been characterized as "...productive, making possible the achievement of certain ends that in its absence would not be possible" (Coleman, 1988: S98).

Two actors with major responsibility for facilitating the use of telecommunications technologies in local community development are the economic development organizations and the telephone companies. Telephone companies are a primary provider of telecommunications services, and local economic development organizations are responsible for marketing the community. The utilization of telecommunications technologies for economic development in rural communities would seem to especially necessitate the cooperation of the telephone companies, and the economic development organizations.

Parker and Hudson (1992) identify telephone carriers as a key in providing leadership for economic development. Furthermore, they maintain that locally owned rural telephone companies often have better facilities and provide more

direct support for communities than the larger urban-based carriers who tend to have little interest or financial initiative to improve rural service.

The type of telephone company ownership may have an impact on the amount of interaction or social capital found in communities. Absentee ownership has been found to decrease interest and participation in local community affairs. Veblen theorized that absentee owned corporations are "...a business concern only, and in the nature of the case its activities as a corporation are limited to business transactions of the nature of bargain and sale, and its aims are confined to results which can be brought into a balance-sheet in terms of net gain" (Veblen, 1923:83).

In a study of absentee owned corporations and community power structure in one community, absentee-ownership is characterized as creating a lack of "...effective liaison" between interest groups and insufficient leadership, a situation that "...lends itself neither to effective community planning nor to adequate facilities and services for the citizenry" (Pellegrin & Coates, 1956:414).

Kaufman's (1959) theory of development *of* a community versus development *in* a community is closely related to the theory of social capital. Wilkinson (1972) describes the distinction between development *of* and development *in* a community by the degree to which the local community is strengthened through social change. Development *in* a community "...treats the community only as a context within which special-interest programs of change, usually of a highly technical nature and with extra-local direction are conducted", while development *of* a community, "...requires that attention be given to the integrative, generalizing structures in the local society"

(Wilkinson, 1972:46-47). The nature of absentee owned companies would suggest a development *in* the community effect, while locally owned companies would seem to favor development *of* the community.

This thesis will make use of the theory of the community of limited liability as a means of linking the concepts of social capital and absentee ownership as it relates to utilization of telecommunications in the economic development of rural communities. One of the basics tenets of this theory is that the extent of community importance varies with investments in the community (Greer, 1962). The community of limited liability theorists have found a relationship between home ownership and involvement with the local community (Orpesa, 1992). Using a variation on this theory, this research will examine whether local ownership of a business has a relationship to involvement in the community. The theory of the community of limited liability originated in urban studies of neighborhood attachment and civic participation, but it has also been applied to rural areas (Korsching, 1984).

1.2 Problem Statement

Rural communities are part of a larger societal transformation into an age of information intensity which is changing at unprecedented speed. Although it is unclear whether telecommunications technologies will decrease the economic gap that exists between rural and urban communities, it is presumable that the provision of this infrastructure may prevent the gap from increasing. Regardless of the degree of positive impacts, rural communities have to plan for change and provide

telecommunication services that will enable them to remain competitive in an information age.

Economic development efforts to integrate telecommunications technologies into rural communities are becoming increasingly important. An important component of any economic development effort is the cooperative nature of community groups, which is one aspect of social capital. There is widespread agreement that social capital is a “vital ingredient in economic development” (Putnam, 1993: 38). This means that rural communities with greater levels of social capital may be better equipped for sustaining their economic welfare in a changing environment. As telecommunications technologies become more important, interaction patterns should increase between economic development organizations and the telephone companies in their communities.

1.3 Objectives of the Study

This study focuses on relationships between economic development professionals and telephone companies. The purpose of the research is to explore the extent to which economic development directors and telephone companies are cooperating in efforts to integrate telecommunications technologies into community economic development programs, and to investigate whether there is any evidence of greater interaction (a component of social capital) in the communities where the telephone company is locally owned. Specific objectives of the study are: (1) to link the theory of the community of limited liability to concepts of social capital and

absentee ownership; (2) to explore the relevance of these theories in the patterns of interaction between local economic development organizations and telephone companies in Iowa; and (3) to use information based on the results of the study to provide recommendations for economic development organization leaders and policy makers in utilizing telecommunications technologies.

1.4 Significance of the Problem

This study examines the significance of social capital in the successful utilization of telecommunications technologies in rural Iowa communities. It is hypothesized that communities served by independent, locally owned telephone companies may have higher levels of social capital, as measured by the frequency of contact between the economic development organizations and the telephone companies, than communities served by absentee owned telephone companies. If this is supported, there are important implications for rural communities and policy makers. If locally owned telephone companies are found to have more interest in the community through greater involvement in local economic development efforts, it would be beneficial for rural communities to encourage cooperation with these companies and protect local ownership of telephone companies from corporate takeovers. Outside investments in local resources may result in less social capital and ultimately may result in a handicap for rural communities seeking to improve their economic condition. This problem can be a real threat to some communities as deregulation increases competition and jeopardizes the stability of local

ownership. Community leaders and policy makers also should consider how this translates to industries other than telecommunications, as corporate dominance becomes more prevalent in many businesses and industries.

This thesis consists of five chapters. Chapter Two summarizes the relevant literature, including previous research, the theoretical frameworks of social capital, and the community of limited liability, and statement of the hypotheses. Chapter Three outlines the methodology of this research study and Chapter Four contains the analysis of the data and the significance of the findings. Chapter Five provides a discussion of the conclusions of the study, its implications, potential limitations, and suggestions for future research.

CHAPTER TWO. LITERATURE REVIEW

2.1 Rural Economic Development

Economic development is a multi-faceted concept that is concerned with equity, well-being, and the ability to adapt to change (Shaffer, 1989). Shaffer defines economic development as; "...the sustained, progressive attempt to attain individual and group interests through expanded, intensified, and adjusted use of available resources. Economic development is goal oriented change, not change for the purpose of change" (Shaffer, 1989:7).

The need for economic development programs in rural communities has intensified over the last decade. The economic changes in the rural mid-west have been extensively documented. Rural areas have experienced considerable decline of traditional resource-based industries, struggles in the manufacturing sector, increases in low-paying service sector jobs, and population outmigration resulting in a deflated tax base. The result of these structural changes has been an expanding gap between rural and urban economic well-being (Mazie and Killian, 1991; Parker & Hudson, 1992; Pulver, 1995; Flora & Christenson, 1991; Sofranko, 1991; Office of Technology Assessment, 1991). On the other hand, differences between rural and urban communities have diminished as urban social and cultural influences have increased through stronger vertical linkages; this has been an evolution with both positive and negative results. Improvements in transportation brought more cultural, educational, and service opportunities to rural residents, resulting in an

enhanced scope of influence and improvements in their quality of life. However, as a result of these changes, the importance of local institutions and local identity has been impaired (Sofranko, 1991). These trends are a consequence of global changes that are imposing major changes for rural economies (Parker & Hudson, 1992).

The rate of return for investments in rural areas is traditionally lower in rural communities due in part to lower demand for goods and services, and higher costs of delivery. Thus, there continues to be a danger that the needs of rural communities will be ignored in favor of more lucrative urban markets, and the cost of services for rural communities may inhibit them from sharing in technological advancements (Hudson, 1987; Office of Technology Assessment, 1991; Dillman, 1991).

These trends have necessitated an intentional program of economic development in rural communities, involving the need to make substantial investments in order to remain competitive. However, because rural communities are unique in the availability of resources, opportunities, and goals, no single strategy of economic development can be the answer for all rural communities (Pulver, 1995). There is no one-size-fits-all solution for rural needs. Rural communities can engage a wide array of economic development strategies. Typically, these strategies involve activities such as recruitment of new firms, improving efficiency of existing firms, encouraging start-up businesses, capturing existing markets, and capturing the return of government dollars (Shaffer &

Summers, 1989; Flora, et al., 1992; DeWitt, et al., 1988;). Although no specific economic development program can be the answer for every rural community, there are common elements in the process of economic development that can make development programs more effective and in turn can advance the quality of life for all residents of a community. There is general agreement that if rural communities ignore the need for economic development programs, the consequence will be further disintegration of their economic well-being (DeWitt et al., 1988).

In view of the growing globalization of the rural economic structure, one of the tools that has been proposed to foster rural economic development is the use of telecommunications technologies. No one implies that telecommunications will solve all the problems of the rural economic situation, but this technology can enable rural communities to improve their economic stability by providing opportunities for the location of information-intensive businesses, allowing faster access to information for existing businesses, supplying the impetus for improvements in educational, government and social services, and enhancing communication linkages to other communities around the world (Parker & Hudson, 1992; Dillman, 1991; Galston & Baehler, 1995). Moreover, given the speed with which telecommunications are transforming society, it is imperative that rural communities keep pace with progressing technologies (Malecki, 1991; Office of Technology Assessment, 1991).

2.2 The Information Age and the Importance of Telecommunications

"In less than a century, we have experienced three distinctly different eras of social and economic organization, each of which required different applications of technology and perhaps, more importantly, ways of thinking" (Dillman & Beck, 1987:189). This statement by Dillman and Beck illustrates the rapid societal transformations that have occurred in the last century. Dillman and Beck have labeled these three distinct eras as the community control era, the mass society era, and the information era. In the age of community control, rural communities were places where neighbors constituted the whole range of interaction and the local community provided the market through and in which a person traded. Information was local, informal, verbal, or written. As the century progressed, the range of influence widened to a more regional and national level. Ties to the local community no longer held as much importance. Information was still transmitted by written or spoken word, but societal organization was marked by increasing levels of hierarchy. The age into which society began moving about mid-century is one marked by and increasing reliance on information, and one in which networks are global and information is increasingly being transmitted by machine (Dillman & Beck, 1987). The impacts of this transformation are important issues for the rural community of the 1990s and beyond. "Since new businesses are likely to be information intensive, it follows that they need strong information infrastructure. Fiber optic cables, digital switching, laser disks, satellite communication, word processors, facsimile transmissions, and computer integrated manufacturing are as

much as the essential elements of economic productivity now as interstate highways, industrial parks, water and sewage systems, and human assembly lines were to the mass society era" (Dillman & Beck, 1987:197).

A means of countering the trends of recession in the rural economy has been efforts to attract businesses that are information-intensive and make extensive use of telecommunications. Telecommunications is defined as communicating over a distance (Wilson, 1992). Information intensive businesses using telecommunications include firms specializing in telemarketing, mail order fulfillment, customer support and data entry (Parker, 1992).

Distance from markets can be a barrier for economic stability of rural communities; telecommunications holds potential for diminishing that barrier (Rowley & Porterfield, 1993, 1992; Wilson, 1992, Leistritz, 1993; Hudson & Parker, 1990). Leistritz (1993) provides examples of contributions of telecommunications to the economy of North Dakota's rural communities and concludes that results have been favorable. Employment opportunities have enhanced rural economies with the expansion of several telecommunications-based firms.

Rural health care providers are using telecommunications technologies to enhance their chances of survival. Many rural hospitals have found that using Electronic Data Interchange (EDI) to communicate with their suppliers is improving their ability to offer high quality service. A growing number of rural hospitals now have the capability of using data networks and video conferencing to consult with specialists in major health centers. Video consultation and diagnostics, along with

in-service training and continuing education are possible through the implementation of progressive technology (Parker & Hudson, 1992).

Rural schools have begun to explore the concept of “distance learning”; as the combination of a changing economy and a declining population base has created fiscal challenges, rural schools have had to rethink the way they provide educational services. Telecommunications technologies hold some promise of continued quality of education for rural schools (Parker & Hudson, 1992).

There also may be indirect benefits of telecommunications technologies. The provision of high quality telecommunications infrastructure may allow existing rural businesses to become more competitive, and reach new and expanded markets. Better price information, reductions in inventory needs, timely delivery of goods, lower travel costs, etc. are made possible through telecommunications (Galston & Baehler, 1995; Barkley, 1993). In addition to improving the business climate in rural communities, telecommunications has the potential of improving the quality of life through better social and cultural opportunities (Galston & Baehler, 1995).

It has been said that there are two sides to every story, and the use of telecommunications in rural communities is no exception. The final outcome resulting from an information-intensive society is yet to be known. There are many potential liabilities to the economic future of rural communities in the information age. Gillespie warns that the “information highway” is not an open highway. “The new ‘electronic highways’ of the information are not, therefore, public thoroughfares

but are more akin to a myriad of private roads” (Gillespie, 1991). Gillespie contends that integrated communication networks serve to increase external control over local communities and he suggests that telecommunications technologies must be designed that will support indigenous development instead of facilitating the loss of local autonomy (Gillespie, 1991). Johnson (1991) expresses another pessimistic view - one that addresses the issue of the ‘technological fix’, pro-innovation bias. Johnson’s concern is that the adoption process for technology will neglect the social, political, and educational needs of society.

While Rowley and Porterfield believe that there are benefits to incorporating telecommunications into the rural economic structure, they also point out drawbacks. Some of these include:

- no reductions in the time for passenger and cargo transfer
- need for travel may actually increase
- service jobs may be concentrated in urban areas
- jobs that do result may be low wage
- rural markets are opened to urban business
- rural areas may be bypassed in favor of developing countries
- may increase the gap between information-rich and poor
- quality of remote learning may be less
- lack of familiarity and hesitancy to adopt must be overcome
- telecommunications does not address the lack of non-electronic amenities. (Rowley & Porterfield, 1992:3)

Bluestone and Harrison (1982) discuss several negative outcomes resulting from the advent of advanced technologies including a greater emphasis on capital mobility, which may result in a shift of production facilities to areas of cheaper labor. Other negative impacts include the elimination of jobs due to an increase in efficiency, and the capacity of multi-national corporations to develop and operate their own communications systems, and bypass local service providers and government regulations. They surmise that this “fundamental struggle between capital and community” results in the sacrificing of the social and economic welfare of some communities for the economic benefit of a few wealthy capitalist concerns (Bluestone & Harrison, 1982).

Even if telecommunications technologies are made available to rural communities, and assumptions are made that they will improve economic well-being and quality of life, there are some characteristics of the rural population that may deter their use. Lack of the knowledge about and the skills to use the technologies that are a part of the telecommunications infrastructure may impede their usefulness in rural communities (Dillman, Beck & Allen, 1989; Wilson, 1992; Allen, et al., 1994; Gieseke, Korsching & Bultena, 1996). This may result in further leakage of business from rural communities (Dillman, Beck & Allen, 1989; Allen, et al., 1994).

Luther Tweeten doubts telecommunications technology will be the economic savior for rural communities. He points out that a slower tendency to adopt technology and inadequate economies of size will likely result in little benefit to rural communities (Tweeten, 1987). The Office of Technology Assessment (1991) study

concludes that the areas most in need of the benefits telecommunications can offer are the ones who will be left behind due in part to the cost and complexity of the innovations.

Ten years ago, Dillman (1985) questioned whether telecommunications can be an effective tool for economic development if one of the impacts is the destruction of the institutional structure of a geographically determined community. There are two antithetical positions regarding the impacts of telecommunications in rural communities. A question begging for an answer is which of these will prevail?. Will the consequences of adoption be positive for rural communities as Hudson and Parker predict; "Telecommunications can foster a sense of community and strengthen cultural identity, which contribute to development in intangible but important ways" (Hudson & Parker, 1990:196)? Or, will telecommunications technologies threaten the strength of rural communities, as Dillman suggests may happen; "The information technology that provides information, which is the traditional source of power and control, may triumph by achieving the provision of information to anyone, anywhere at anytime, but in doing so, it may undermine the traditions that have usually brought people together into the social life of the society and built a national consensus" (Dillman, 1985:14)? The answer probably lies somewhere between those two possibilities.

It is apparent that the "Information Age" is a reality, and that rural communities must be a part of the transition if they are to remain viable (DeWitt et al., 1988; Galston & Baehler, 1995). The development that must occur in this shift

to a more information-intensive society will require the supplying of adequate infrastructure, but that infrastructure by itself cannot insure success. The degree to which communities work together in pursuing common goals is an important factor in accomplishing those goals. Research conducted for the National Governors Association found that "...the most high-growth counties had a well-organized partnership of local leaders who worked for economic growth and diversification with the support of the local government" (DeWittt, et al., 1988: 43). Local partnerships included people from three groups: business leaders, economic development professionals, and other local leaders (DeWitt, 1988). Eventual impacts will be determined by the ends to which communities use the technology (Bates, 1990)

2.3 Factors for Successful Development

Since the need for rural telecommunications is evident, the question becomes how economic development programs incorporating telecommunications technologies can best be implemented. It has become conventional in recent years to make a distinction between economic development and community development (Ryan, 1988; Kelley, 1993; Wilkinson, 1991; Snow, 1995) Economic development efforts can become futile if approached from a stand-alone perspective and can serve to decrease local solidarity. "Capital and information alone will not ensure the emergence of local economic development unless residents are able to work together and motivate others to create an environment favorable to successful

economic activities" (Ryan, 1988:367). Traditional zero-sum economic development results in a process that "protects the status quo, contributing more or less to private business revenues, but... contributing little to the common good" (Snow, 1995:187). Snow concludes that "In an economic development sense, building community creates value, and we create value by building community" (Snow, 1995:192). Many scholars maintain that community development must be the basis for economic development (Snow, 1995; Hayton, 1995; Kelley, 1993; Christenson, Fendley & Robinson, 1989; Ryan, 1988; Wilkinson, 1972).

Shaffer maintains that "economic development is a social/human phenomena" (Shaffer, 1989:7). In a later article, Shaffer discusses characteristics that foster economic stability: "Economically viable communities possess a value system that encourages experimentation, maintains a slight dissatisfaction with current conditions, produces a history of implementing solutions, and facilitates frank and open communication across all segments of the community" (Shaffer, 1990:85). Chambers and McBeth advocate a "community encouragement" approach to development. Priorities are on placing responsibility for development within the community itself and emphasizes eventual independence from outside services; "...a return to its traditional meaning of fellowship..." is key to economic and social stability of communities (Chambers & McBeth, 1992). This view reinforces Jimmerson's approach to development; "...the promotion of individual and group growth should not be viewed as being in conflict with social or economic growth. In the long run, concentrating on individuals and groups should lead to

more numerous and effective efforts to achieve social and economic development” (Jimmerson, 1984:88).

Closely related to the community versus economic development concept is Kaufman's (1959) theory of development *in* versus development *of* the community (Christenson, Fendley & Robinson, 1989; Littrell & Hobbs, 1989; Shaffer & Summers, 1989; Blakely, 1989; Garkovich, 1989; Wilkinson, 1989, 1986, 1972, Fitzgerald & Meyer, 1986). Another way of stating this is development *in* the community is “placed” in a community and development *of* a community is “based” there (Fitzgerald & Meyer, 1986). The emphasis in traditional economic development equates with development *in* a community; community growth and modernization is the focus, with the community treated only as a context for special interest programs of change (Wilkinson, 1972). Specific task accomplishment is the goal. On the other hand, community development corresponds to development *of* the community. “Development *of* the community requires that attention be given to the integrative, generalizing structures in the local society” (Wilkinson, 1972:47). When development programs include deliberate efforts to involve the whole community in the planning and decision making process, the focus turns from limited, single-interest issues to building capacity for solving future problems, dealing with changes, and promoting and enhancing all community interests.

Two concepts inherent within much of community development theory are the importance of attention to a structure building process and the quality of leadership (Wilkinson, 1991). When a development process centers on structural concepts,

building and sustaining relationships among various actors in the community is the focus (Malecki, 1991; Christenson, Fendley & Robinson, 1989; Littrell & Hobbs, 1989; Shaffer & Summers, 1989; Garkovich, 1989; Flora & Flora, 1991; Wilkinson, 1991, 1986, 1972). Malecki (1991:24) sums this up: "Development dynamism is the product of change involving all infrastructures - economic, spatial, institutional, and social - of society, and is a phenomenon that can restructure a nation's socio-economic base". Structure building is fundamental to the success of integrating telecommunications technologies (or any other development strategy) into the development plans of rural communities. For without attention to structural issues, "...task accomplishment is likely to be transitory at best" (Wilkinson, 1991:97).

Numerous scholars have discussed the significance of coordinated and cooperative community efforts. Kelley (1993) contends that community and economic development are processes that are (1) interdependent, (2) occur in stages, (3) attentive to quality of life issues and, (4) constantly in motion. Kelley purports that successful rural development requires "...coordinated efforts of government, community leaders, nonprofit groups, entrepreneurs, and the private sector" (Kelley, 1993:124). Wilkinson (1986:12) states that a requirement in community development is "...frequent, open contact among those who share a local society". Tilly (1974) purports that effective community organization requires the creation of leadership, establishing communications lines and feeding in information (Tilly, 1974). One of Shaffer's (1990) characteristics of economically viable communities is a "...high level of intracommunity discussion" (Shaffer, 1990:76).

One aspect of this characteristic is that major community actors converse through numerous channels, not through third parties (Shaffer, 1990). Ryan (1994: 15) affirms this view and stresses the importance of collective action for community structure, "...individuals participation in collective action serves to strengthen community solidarity and increases the amount of social capital available for future development efforts". Luloff and Swanson (1995) refer to *community agency*, or the community's capacity for collective action as an important, but often neglected component of development efforts (Luloff & Swanson, 1995). Leonard S. Cottrell, Jr. (1977) outlined four characteristics of a "competent community": (1) ability to collaborate effectively in identification of problems and needs; (2) ability to achieve a working consensus on goals and priorities; (3) ability to agree on ways and means to implement goals; and (4) ability to collaborate effectively in required actions (Cottrell, 1977).

In a 1994 study examining rural, mid-west community integration of telecommunications technologies, Allen et al., found that the most aggressive communities had (1) organized local groups to facilitate adoption, (2) clearly included telecommunications specialists in economic development plans, and (3) included specific plans to utilize telecommunications technologies (Allen et al., 1994:9).

Three areas of concern have been identified that are keys to sustainable rural development of rural communities: investment in human capital, investment in basic physical infrastructure, and development of social infrastructure (Parker &

Hudson, 1992). The following two sections discuss the social infrastructure component of community development. Social capital, a component of social infrastructure, can be defined as the level of mutual trust that exists in a community and works toward the fulfillment of common goals. Social capital is a multi-faceted concept; two issues included in social capital are community cooperation and leadership qualities.

2.4 Social Capital

Social capital has been identified by some as individual resources, but others have used the concept of social capital to refer to embeddedness, the formation of a collective conscience, providing a social, rather than individual basis for action (Flora & Flora, 1995). Ryan (1995:2) describes social capital as an investment that "...pertains to resources that are invested in the abilities of a community to act collectively in pursuit of common needs".

Community cohesion is another term by which social capital can be identified. Greisman (1980) presented a pessimistic assessment for the future of cohesive communities. He pointed out that residential stability, territorial integrity and homogeneity are indications of the capacity for cohesion within a community. His assessment of contemporary communities was that communities are highly vulnerable to influences that destroy cohesion. Two of the forces that he suggested as negative impacts on cohesion are (1) roads and (2) displacement. He purports that the practice of breaking up neighborhoods through the construction of

disintegrates community cohesiveness as does “gentrification” where real estate is bought and sold for profit without attention to the destructive aspects for the community (Greisman, 1980). As Greisman points out, there are many forces that potentially can have negative impacts on the cohesiveness of a community. Of particular interest in the current study is the impact that absentee ownership may have on community relationships.

Coleman (1988) introduced the concept of social capital, using many of the same concepts. He asserts that social capital is as much a resource as any other form of capital. Social capital is defined by its function, being not a “single entity”, but a variety of different entities with common elements; social capital consists of some aspect of social structure that facilitates action within that structure (Coleman, 1988). Social capital is attained by changes in the relationships between persons that bring about action. Additionally, social capital can be found in the relationships of corporate or organizational structures. An especially important norm within social capital is that an individual acts not for fulfillment of personal goals, but in the interest of the public good (Coleman, 1988; Putnam, 1993).

Anderson (1990) proposed that cooperation within a community is “absolutely necessary” in achieving community goals. Again, this concept of community cooperation is closely linked to the concept of social capital. Anderson also purports that successful community action programs call for more than individual participation. Corporate or organization commitment must be procured for any community action to have a lasting impact. Without that organizational support and

commitment, the results will likely be projects that "...engage in a lot of talk, have a lot of dialogue, but have no action program" (Anderson, 1990:142). This aspect of community cooperation, or social capital, is pertinent to this study. The integration of telecommunications technologies in rural economic development programs would seem especially to necessitate the cooperation of economic development organizations and telephone companies. Sampson (1991) found support for earlier studies that residential stability has a significant positive effect on community based social ties, which in turn has a positive effect on community cohesion (Sampson, 1991).

Furthermore, it has been suggested that social capital has a positive effect on the rate of return from investments in other forms of capital (Burt, 1992; Ryan, 1995). The connection between social capital and economic development is becoming evident. Putnam (1993) reported that north-central Italian communities with a history of civic solidarity, in which social networks foster a sense of cooperation and communication, have been more innovative and successful, while in southern Italy, communities lack strong social networks and are less effective at accomplishing goals. Putnam stresses that: "Communities, in north-central Italy did not become civic because they were rich. They became rich because they were civic" (Putnam, 1993:37). It is not suggested that social capital can procure economic stability independent of public policy, but rather that public policy will be more effective in communities where social capital accompanies it (Putnam, 1993). That social capital should be "...an important consideration in all forms of future

rural development - including economic development” (Ryan, 1995:8) is strongly supported by the literature.

Communication linkages have always been an important component of community, but in a societal transformation to an Information Age, those networks will be even more significant. Flora and Flora (1993) have discovered that a sound social infrastructure enriches those networks.

As economic and social networks expand to include more than local interests, telecommunications technologies become necessary. It may be that strong local networks will provide the means to achieving the provision of the requisite infrastructure. Flora and Flora contend that: “... both physical infrastructure and leadership training are necessary components of community development but are not sufficient, either separately or in combination. A third component, social infrastructure, is the key to linking individual leadership to physical infrastructure and to facilitating community development” (Flora & Flora, 1993:49).

Flora and Flora (1995) have outlined three formations that social capital can embody:

- horizontal social capital is characterized by mutual trust and reciprocity across all segments of a population
- hierarchical social capital exists in communities where power is concentrated in the hands of a few
- social capital is non-existent in communities that are socially fragmented.

There are some who are pessimistic about the state of social capital in American communities. Robert Putnam places some of the blame for this decline on growing telecommunications technologies. Putnam urges that research and public policy must search for answers on how to reverse the trend of declining social capital (Putnam, 1995).

Flora and Flora contend that there are "...structural reasons ... that are biased against the formation of social capital. When programs are delivered in a top-down fashion, with the decisions and resources coming totally from outside the community, social capital decreases and dependency increases" (Flora & Flora, 1995). It may be that national level policies in this age of deregulation increase top-down control, but although these policies set parameters for the telecommunications industry, the provision of services and innovative action still depends on local initiative.

An in depth examination of the subject of leadership qualities is beyond the scope of this project, but its role in economic development is significant. Community leadership, especially as it relates to community attachment, is pertinent to the subject of social capital. The following section is a brief discussion of the literature on the nature and importance of community leadership in economic development. Section 2.6 then discusses the relationship of community attachment to absentee ownership.

2.5 Community Leadership: Attitudes and Attachment

It is commonly accepted that attitudes play an important role in affecting behavior. Ayres and Potter (1989) suggest that attitudes toward change may be the root of differences between communities that are proactive and successful at local action and those that are not. Attitudes of both leaders and residents are important considerations, but of particular interest in the current study is the relationship between leaders' satisfaction with community services and interest in active community development (Ayres & Potter, 1989). Their research found that leaders who felt more positively about local services were more interested in active community involvement.

A common goal, a spirit of unity, and cooperation are essential for the development of rural communities. An environment that "...encourages free exchange of information, effort and resources among community leaders" is essential (DeWitt, et al., 1988:48).

The relationship between social networks of leaders and community viability has been examined in empirical studies (O'Brien, Hassinger, Brown, & Pinkerton, 1991; O'Brien & Hassinger, 1992). Two types of linkages are important for community leaders: linkages that provide access to outside resources, and strong local ties that facilitate coordination (Jenkins, 1983; Flora & Flora, 1993; Garkovich, 1989).

Flora and Flora (1988) have found that communities are stronger when there are leaders who have a history of working on development projects. Similar findings

were reported from the empirical study of O'Brien et al. (1991). They found that two variables (1) how much leaders had worked with other leaders on community projects, and (2) whether they belonged to a community development association, explained a great deal of variance in community viability. Leaders from more viable communities in the study were more likely to have worked with others and a higher proportion were members of development organizations (O'Brien et al., 1991).

These findings led them to purport that: "It is not the characteristics of leaders *per se* which appear to make the difference, but rather, the way in which leaders relate to one another. These relationships place the more viable communities in an advantageous position *vis-à-vis* other rural communities, even though their material resource base may not be appreciably better than that found in other places within the same general economic and ecological niche" (O'Brien, et al., 1991:712).

Caution must be reserved in this line of thought, lest it be presumed that strong local ties are exclusively responsible for community viability. A later study by O'Brien and Hassinger found that social ties too closely associated with the local community inhibit leaders from making contacts outside the community (O'Brien & Hassinger, 1992). Building on the work of Granovetter (1973), it has been established that "weak ties" build bridges that link local leaders with outside resources. Granovetter, along with other scholars, have continued to find support for the "strength of weak ties" theory. Weak ties are contacts of acquaintances rather than friendship, and are important conduits through which outside information is brought into communities. If a community network is too closely embedded within

its own boundaries, that community is likely to become inflexible, in addition to being deprived of much needed information (Granovetter, 1982).

It would appear that there is a need for a balance between strong local ties and the ability to access outside information. One of Granovetter's (1982) findings of particular interest to the current study is one that reinforces the concept of social capital. He stresses that the most important function of weak ties is how well they operate as bridges. He goes on to report that one Boston community, which successfully fought against urban renewal, had a "...rich organizational life, and its male residents worked within the community". Another community from the same city, but lacking those characteristics, was not successful at the task (Granovetter, 1982:130).

Granovetter's (1982) conclusion is related to the objectives of this study. All of the respondents are linked to a development association, but some are clearly stronger than others. The question of working within the community is related to telephone company ownership. The current study seeks to explore the relationship between local versus absentee owned telephone companies and the level of cooperation with economic development organizations. Absentee ownership is the subject of the next section. It is presumed that absentee ownership inhibits telephone company personnel attachment to the community. Numerous researchers have found that community attachment is an essential component in collective action (Cottrell, 1977; Ayres and Potter, 1989).

2.6 Absentee Ownership

Flora et al. liken social infrastructure to a chain that is only as strong as its weakest link (Flora, et al., 1992). This research emphasizes the link between economic development organizations and telephone companies in efforts to incorporate telecommunications technologies into rural communities. The hypothesis is that absentee-ownership of telephone companies weakens the chain.

Writing at the beginning of this century, Thorsten Veblen spoke of absentee owned corporations as "...impersonal in all its contacts and dealings. ... It is a business concern only, and in the nature of the case its activities as a corporation are limited to business transactions of the nature of bargain and sale, and its aims are confined to results which are brought into a balance sheet in terms of net gain" (Veblen, 1923:82). If one of the major components of social capital is acting on behalf of the *public good*, then Veblen's assessment of absentee owned corporations stands in direct opposition to the presence of social capital. He states: "Absentee ownership and absentee management on this grand scale is immune from neighborly personalities and from sentimental scruples" (Veblen, 1923:215).

In a study of one community, Pellegrin and Coates (1956:414) found that civic projects are "...usually doomed if they lack the approval of the industrial absentee owned corporations". They found that although managers of absentee owned corporations did participate in civic organizations, their participation was typically performed in anticipation of personal gain, rather than concern for the community (Pellegrin & Coates, 1956).

Schulze (1958) studied the role of absentee ownership in the community power structure of one community, which like many others had become "...satellites in a society increasingly dominated by giant metropolitan centers and large national corporations" (Schulze, 1958:3). His hypotheses examined the suggestion that as non-local control of economic determinants increases, the corporations' interests in the local community diminishes. His study found that none of the managers of absentee owned corporations had held any community public office, either elective or appointive. He pointed out that early in the century (1) the local economy was controlled by local residents (2) all of the major businesses were locally owned, and (3) the majority of its leading business owners were extensively associated with networks *within* the community. Since about 1930, that structure had changed, and the community experienced (1) increasing numbers of locally owned industries that had become suppliers for a small number of large, absentee owned manufacturers, and (2) an accelerating frequency of branch plants owned by large corporations outside the community. Accompanying these changes was a disintegration of the internal networks that business owners had formerly been part of and that had linked major economic enterprises within the community. (Schulze, 1958). Schulze concluded that a "...bifurcation of the community's power structure..." was the result of increasing control of the economic structure outside the community (Schulze, 1958). The findings of this study led him to conclude that the economic determinants, especially those representing absentee owned corporations were disassociating themselves from active involvement in the community's power

structure, opting in favor of a “hands-off” policy in local decision making (Schulze, 1958).

Collective action is dependent upon the pooling of resources and public participation. Tilly (1974) theorized that decline in the community capacity to act is a result of the rising scale, complexity, and mobility of social life, but not on the attrition of local ties. This decline, according to Tilly, has been the result of structural change factors inside and outside the community, one of which has been industrial concentration (Tilly, 1974).

Fitzgerald and Meyer (1986) contend that local economic development efforts are constrained by non-local control, of which one factor is agglomeration of US industry. Economic activity “placed” in a community versus that which is “based” in a community can be classified by three distinguishing features: (1) a locally-owned, small scale organization is more likely to reinvest in local enterprises, while a large, non-local corporation is more likely to find investment opportunities elsewhere; (2) increased concentration of production has resulted in an economic climate of instability; and (3) increasing conglomeration of US industry threatens the stableness of employment (Fitzgerald & Meyer, 1986).

The history of absentee owned corporations contributing to economic instability has been discussed by several scholars (Bluestone & Harrison, 1982; Barkley, 1978). Suspecting that owners who live apart from the community where their businesses are located have little interest in the community, Meek et al.(1988), sought support for that view. They describe a “distancing process” that occurs

between absentee owners and their employees. A *psychological distance*, involving a gulf between common motives, beliefs, needs, and reasoning, intensifies as interaction decreases. A *social distance* increases because owners share none of the same cultural ties. While locally owned companies share values, beliefs, and roles tied to the community, no such ties exist when ownership is removed from the community. *Technical distance*, the depth of understanding the details of the company, decreases with absentee ownership. Managers of branch locations often know only enough of the managerial functions of the company to propel them up the corporate ladder. Owners or managers of locally owned businesses have a more complete understanding of how the business functions. *Geographical distance* is obvious, but it implies a lack of understanding of local needs and concerns. In some cases, it becomes intentional with managers who choose to live away from their place of employment (Meek, et al., 1988). Meek et al. refer to an earlier study by Warner and Low (1946) which found that locally owned business interests and community interests were directly linked. On the other hand, absentee owned companies had become all but oblivious to local concerns. Building on Warren's (1978) horizontal/vertical linkage theory, Meek et al. explained that locally owned businesses become horizontally linked to the community because their leadership depends upon mutual support and acceptance of peers. They have to co-exist in the same community. In contrast, local managers of absentee owned companies have to answer to corporate superiors; the community's needs are subordinate to

the demands of corporate control, because to do otherwise would potentially cost them a career (Meek, et al., 1988).

The relevance of this literature to the current study is clearly tied to the nature of the telephone industry. The 1991 Office of Technology Assessment study concluded that the divestiture of the Bell Telephone System had a negative impact on rural telephone users, because much of the decision making shifted from government control to business control. Since the markets for telephone services in rural areas are not as lucrative as urban areas, much of the technological innovations are being concentrated in metropolitan markets (Office of Technology Assessment, 1991). Galston and Baehler (1995) include examples of telephone company involvement in community development that are not in the best interest of the community. They describe one Bell company as complacent, another as a genuine obstacle, and find that small communities generally have difficulty in obtaining assistance on telecommunications projects because the telephone company has become concentrated in urban markets (Galston & Baehler, 1995). They also cite research that has found many examples of independent telephone companies playing important roles in local development initiatives, taking bigger risks, and generally paying close attention to the telecommunications needs of the local community (Galston & Baehler, 1995).

Independent rural telephone companies have a better reputation for responsiveness to the local community needs (Sawhney et al., 1991; El-Ghamrini, 1995). Furthermore, locally owned rural telephone companies have been found to

provide high quality service to the customers (Gieseke et al., 1995; El-Ghamrini, 1995). The revenues of locally owned, telephone companies are dependent solely upon sales to local customers, thus making it more likely that they will take a greater interest in community needs and take bigger risks to provide for those needs (Galston, 1995).

2.7 Community of Limited Liability Theory

Morris Janowitz (1952) introduced the theory of the community of limited liability in a study of urban newspaper personnel. The community of limited liability theory maintains that individual commitment to a community "...is such - his investment is such - that when the community fails to serve his needs, he will withdraw. Withdrawal implies either departure from the community or merely lack of involvement" (Janowitz, 1967:212). Janowitz found that community residents invest varying degrees of social and psychological attachments to their community. Variations can be significantly accounted for by individual characteristics related to raising a family, home ownership, and somewhat less by length of residence and local social contacts (Janowitz, 1967,1978).

Although the community of limited liability theory originated in studies of social patterns of urban residents in community interaction, the theory is "...equally applicable to rural areas" (Korsching, 1984:266). Considering the structural changes that are decreasing the distinctions between rural and urban areas (Littrell

& Hobbs, 1989; Garkovich, 1989, Hobbs, 1995) this theory is relevant to studies of rural communities.

Greer (1962) posits that (1) greater mobility has resulted in land becoming transferable property, rather than a place of emotional attachment, and (2) the displacement of activity from the local community has "... weakened the interactional network of the local area" (Greer, 1962:108). Similarities to contemporary assessments of rural change are noteworthy. Littrell and Hobbs (1989) note that mobility and a growing number of special interest organizations have created a more heterogeneous rural culture. As a result, residence in a spatially defined community no longer means that people have common interests, values, or beliefs (Littrell & Hobbs, 1989). Garkovich (1989) outlines three trends in rural society including: (1) restructuring - including greater mobility, complex industrial linkages, and reliance on market forces beyond local control; (2) devolution - more responsibility being placed on local governments; and (3) revitalization - diversification of the socio-economic base with the arrival of new people and new industries. These trends have led one sociologist to proclaim: "The relational aspect of community has fallen victim to the specialization of interests linked to non-local institutions. Cooperation among residents does not serve the breadth of interests it formerly did" (Hobbs, 1995:388). Greer (1962:108) stated it this way: "Thus the communion of those who share a locality is weakened, and the primary community fades away". Furthermore, Greer (1962:111). points out that the

geographical propinquity can be "... a basis for interdependence only when it constitutes a field for social action".

Greer explains the community of limited liability as a movement away from the ideal type of community represented by the New England township. Community attachment varies from the local merchant who has a bigger investment and more at stake, to home-owning residents with children, and finally to renters with no children (Greer, 1962).

Several empirical studies have supported the community of limited liability, finding correlations between community participation and family status, length of residence, and investment characteristics (Guest & Lee, 1983; Connerly, 1985; Slovak, 1986; Orpesa, 1987,1992).

Suttles (1972:61) broadened the community of limited liability theory from its original focus on residential commitment in civic activities to include applications to the centralization of big business and big government in what he terms "the expanded community of limited liability". Two characteristics of expanding business and government are (1) an additional level of administration between national/state/metropolitan centers and the local community; and (2) discretion is pushed upward in the organization - local control is removed from the decision making process. Suttles points out difficulties that arise for the local community because of this shift: (1) local organizations are now too small to approach the high level administrative offices that affect them; and (2) their constituency is too small to

wield any influence. The result is that local level organization is largely ignored (Suttles, 1972).

The fundamental issue addressed by the community of limited liability, (community participation as a function of residential stability, familial structure, and home ownership) parallels the topic of this study. The community of limited liability theory is applied to the issue of telephone company participation in economic development efforts to incorporate telecommunications technologies into rural communities. Telephone company ownership (locally owned, independent versus, corporate, absentee owned companies) is explored as a variable for explaining differences in the frequency of contact with the economic development organization. In place of residential ownership and stability, business ownership (in this case, the telephone company) will be studied to show whether there is a relationship between local ownership and community involvement. Participation in community action programs is directly related to the concept of social capital. Therefore, these two theoretical perspectives, social capital and the community of limited liability, are shown to be closely related.

2.8 Hypotheses

The following hypotheses, based upon the linkage of these theories and previous research, will be tested:

1. Levels of interaction between economic development organizations and telephone companies are positively related to perceptions of the importance of telecommunications for economic development.
2. Levels of interaction between economic development organizations and telephone companies are positively related to development personnel's satisfaction of local telecommunications services
3. The levels of satisfaction of telecommunications services are positively related to local ownership of telephone companies.
4. The levels of interaction between the economic development organizations and telephone companies are positively related to local ownership of the telephone company.

It is expected that greater perceptions of the importance of telecommunications technologies for economic development would lead to more interaction between economic development leaders and the local telephone company. Hypothesis 1 tests this relationship.

Hypothesis 2 explores the relationship between satisfaction with local services and interaction patterns. Previous research suggests that more interaction will result from higher levels of satisfaction with local services.

It is anticipated that locally owned telephone companies can be equated with development *of* the community, while absentee owned telephone companies are more associated with development *in* the community. Hypothesis 3 will study the impact of local versus absentee ownership of the telephone company on levels of

satisfaction with the provision of telecommunications services. The hypothesis explores whether there is any indication that satisfaction with services is higher in communities where the telephone company is “based” in the community, rather than “placed” in the community.

Hypothesis 4 tests the relevance of the community of limited liability theory as it relates to social capital. Community of limited liability theorists hold that “...community participation results from the nature of investments that residents hold in the area” (Orpesa, 1987:92). Community connections are formed as a result of common interests; locally owned telephone companies and the communities they serve share an interest in each other’s prosperity. It follows that locally owned telephone companies will be more motivated to participate in local economic development activities.

CHAPTER THREE METHODOLOGY

The purpose of this study was to examine the extent to which economic development organizations and local telephone companies are cooperating in development programs for rural communities and factors that may affect that interaction. In an age when a transition to an information-intensive society is progressing at an unprecedented speed, rural communities must provide the infrastructure to support telecommunications technologies. The focus of the research is on the process through which development projects are planned and implemented, and in particular, the social capital component that has been found to be essential for sustainable development. One of the major components of social capital is the willingness of individuals and community groups to cooperate in the process of attaining common goals. Partnerships between economic development organizations and local telephone companies are especially important in reaching a goal for planning for changes in telecommunications needs and providing the requisite infrastructure and skills to use advanced technologies.

The study intends to demonstrate that the community of limited liability can be described as one in which social capital is deficient. Two elements of the community of limited liability theory are examined; investment in the community is studied in relation to the telephone company, and length of residency is examined in respect to the economic development leaders. It is hypothesized that absentee ownership may be one factor that contributes to lower levels of social capital.

Economic development and telephone company interaction patterns are examined, with comparisons made between communities served by locally-owned, independent telephone companies and those served by absentee owned, corporate companies. The economic development leaders' length of community residency is considered to ascertain if that community of limited liability principle is associated with interaction patterns.

3.1 The Research Setting

Data were collected from a sample of economic development personnel in rural Iowa communities. This research was part of the Rural Development Initiative of the Iowa Agriculture and Home Economics Experiment Station, College of Agriculture, at Iowa State University. In the fall of 1995, 207 interviews were completed with persons who were identified as the economic development contact in their community. The sample was selected from an Iowa Department of Economic Development (IDED) community directory. In order to maintain a rural focus, communities with 25,000 or more residents, and communities located in counties designated as Standard Metropolitan Statistical Areas (SMSAs) were eliminated from the population sample. Preference for inclusion in the study was then given to communities that had an economic development organization. The person listed in the IDED directory as the economic development contact for the community was chosen as the respondent for the community. A letter from IDED giving support for the project was mailed along with the pre-notification letters.

Telephone interviews were conducted by Iowa State University's Center for Family Research in Rural Mental Health.

The names of the telephone companies for the sample communities were obtained from the Iowa Telephone Association (ITA). The telephone industry in Iowa is composed of 154 locally owned, independent companies and 3 absentee owned, corporate companies. There are 843 telephone exchanges in the state, 484 of which are operated by one of the three corporate companies. The remaining 359 are served by independent telephone companies, of which 29 are located in neighboring states. These independent telephone companies are not a homogeneous group of businesses. Results from a 1993 state-wide survey of 134 telephone companies revealed a wide range of telephone company characteristics (Gieseke, et al., 1995). Telephone company size, as measured by number of employees, is likely to impact the capacity for active involvement in community development programs. Data from the 1993 survey show that size of telephone companies ranged from 1 - 96 full-time or part-time employees. The mean number of employees was approximately 7 (El-Ghamirini, 1995).

3.2 Reliability and Validity

Validity and reliability are important for evaluating the accuracy and consistency of measures. If an instrument measures what it is intended to measure, it is said to be valid. Two forms of validity are (1) construct validity: the empirical

confirmation of a measure, and (2) content validity: support gained from theory and previous research.

Reliability tests are used to evaluate the accuracy and consistency of the data. The test of reliability used in this study is Cronbach's Coefficient Alpha, which measures the internal consistency for continuous data. An alpha coefficient of .7 or higher is generally considered acceptable, but many consider .6 or higher adequate. The three scales developed for this study, interaction between the economic development organizations and local telephone companies, satisfaction with local telephone services, and perception of the importance of telecommunications technologies, were found to have high alpha scores. Because the measures are consistent with previous research, content validity can be assumed.

3.3 Dependent Variable

Social capital is an important component of any economic development program. Communities with stronger social capital are more able to be successful at integrating their physical, financial, and human capital into development that leads to economically sustainable communities. McDowell (1995) asserts that communities can gain or lose opportunities depending upon their preparedness, willingness to act, and capacity to respond. Future success at maintaining economic stability of rural communities will depend, at least in part, on their ability to keep pace with advancements in telecommunications technologies.

Two characteristics of strong social capital are cooperation between community sectors and open lines of communication that permit sharing of information. The dependent variable in this study is a assessment of the interaction patterns between economic development leaders and the local telephone service provider. The study employs the use of three separate measures of the dependent variable.

The first is an index of social capital that measures interaction between economic development organizations and telephone companies. A scale was constructed from five questions (Q4, Q5, Q28af, Q28bf, and Q28cf) in the survey (see Appendix One).

Economic development contact persons were asked how frequently they were in contact with officials of the local telephone company in planning and conducting economic development activities(Q4). Responses were recoded so that nonexistent or infrequent = 0; and frequent or very frequent = 1.

Respondents were then asked how involved the local telephone company is in the community's economic development efforts. Telephone company involvement with economic development efforts (Q5) was recoded into two categories: non-existent or very low involvement (1 - 2) was coded 0, medium or high involvement (3 - 5) was coded 1.

Telephone companies should be a good source of information about telecommunications technologies; sharing information with the community is another measure of social capital. To measure how much information is provided to the

economic development organizations by the telephone company, respondents were asked "Is the local telephone company a source of : written materials about telecommunications (Q28af); seminars or conferences on telecommunications technologies (Q28bf); and personal consulting on the use of telecommunications technologies (Q28cf). Response categories were recoded to Yes = 1 and No = 0. Table 3.1 presents the distributions for the five questions.

Table 3.1 Items included in the cooperation & communication scale (Interact)

Item		Frequency		Percentage
Q4.	How much contact with the local telephone company	0)	155	74.9
		1)	52	25.1
Q5.	How involved the local telephone company is with community's economic development activities	0)	126	61.5
		1)	79	38.5
Q28af.	Is the local telephone company a source of information (written materials)	no)	141	69.1
		yes)	63	30.4
Q28bf.	Is the local telephone company a source of information (conferences or seminars)	no)	190	91.8
		yes)	17	8.2
Q28cf.	Is the local telephone company a source of information (personal consulting)	no)	179	87.7
		yes)	25	12.3

A measure of cooperation and communication (social capital) between the economic development organization and the local telephone company was derived by summing the scores on these five questions. The range of scores for the scale is 0 - 5. The distribution for this composite variable ("interact") is presented in Table 3.2. The scale has a Cronbach alpha coefficient of .77.

Table 3.2 Composite scores for interaction variable (Interact)

Interaction score	Frequency	Percentage
0 (No interaction)	103	49.8
1	38	18.4
2	27	13.0
3	18	8.7
4	15	7.2
5 (Very frequent interaction)	6	2.9

Mean = 1.14 Standard Deviation = 1.44

Cronbach alpha = .77

Two additional measures of the dependent variable used in this study were obtained from Questions 6h and 6i (See Appendix One). The respondents were asked to rate the local telephone company on its willingness to assume a leadership role in the community's economic development activities (Q6h). This was considered one indication of the level of social capital available to the community. Telephone company willingness to financially support economic development activities, other than telecommunications, (Q6i) is an indication of the overall involvement in local community development projects. Respondents were asked to rate the telephone company on a scale of 1 (poor) to 10 (excellent). These variables are referred to as "Leader" (Q6h) and "Finance" (Q6i). The scores for "Leader" ranged from 1 to 10, with a mean score of 4.12 and a standard deviation of 3.10. Scores for "Finance" ranged from 1 to 10, with a mean score of 4.28, and a standard deviation of 3.32.

The levels of interaction between the economic development organizations and their local telephone companies are clearly very low. It is apparent that there is little communication or cooperation between the two organizations. The mean score for 'Interact' is only 1.14 of a possible score of 5. One-half (49.8%) of the scores on the interaction scale were 0, indicating very limited or no interaction between the two organizations. Only one-tenth (10.1%) of the scores were at the highest level. The mean scores for the variables measuring leadership and financial commitment by the telephone companies were moderate.

3.4 Independent Variables

The first set of independent variables, are measures of the professionalism of the economic development organization. Many economic development programs in rural communities are administered by part-time community volunteers. With limited amounts of time and expertise devoted to development programs, rural communities often lack the capacity to act and may fail to seize opportunities. According to Ronald J. Hustedde (1991), rural communities face three obstacles in contrast to urban communities. Due to limited population size, organizations typically operate with fewer individuals. Smaller, rural organizations rely more on volunteers, in contrast to urban communities that can hire a professional staff. Third, geographic or social isolation can limit the amount of outside expertise available to rural communities (Hustedde, 1991). Although involvement of volunteers is important in building shared citizen involvement, it is assumed that communities with more

professional economic development programs may be more successful at building the capacity necessary to incorporate improve their quality of life. Lack of time to devote specifically to economic development efforts may result when volunteers with other concerns are relied upon to coordinate the economic development activities of a community. Variables used to represent professionalism within the economic development organization were: hours per week devoted to economic development activities (Q1), and existence of a written plan that sets out goals, priorities, or policies for economic development (Q2a) (See Appendix One).

Respondents were asked "How many hours per week do you spend on local economic development activities?" Responses ranged from 1 - 60 hours per week, with a mean of 12.9 hours, and a standard deviation of 15.1. Over one-half of the respondents devoted five or fewer hours to economic development activities. Fewer than ten percent reported that economic development was full-time work (40 or more hours each week).

A written plan is considered an indication of an active economic development organization (Walzer & Gruidl, 1991). Although merely having a plan cannot presume effectiveness, it is a measure of a dynamic and better organized economic development program. Respondents were asked "Does the development organization for which you work have a written plan that sets out goals, priorities, or policies for economic development?" Responses were recoded to Yes = 1 and No = 0. A majority of the economic development organizations did have a written plan, but there was a substantial number that did not. Sixty-two percent (127) of the

study sample responded that they did have a written plan; 38 percent (79) did not. Additionally, respondents who had a written plan were asked if the plan specifically discussed telecommunications needs or problems. More than three-fourths (78.7%) reported that the economic development plan did not include any discussion of the community's telecommunications needs. These variables used to measure the level of professionalism with the economic development organization are summarized in Table 3.3.

Table 3.3 Frequencies and percentages for variables used to measure professionalism of economic development organization

Item		Frequencies		Percentage
Q1	Hours/per week devoted to local economic development activities	(0-5)	10	53.1
		(6-19)	9	18.8
		(20-39)	37	17.9
		(40 +)	21	10.1
Q2a	Existence of a written economic development plan	YES	127	61.7
		NO	79	38.3

Two personal characteristics of the economic development respondents, highest level of education, and years of community residency, were included as independent variables. Level of educational attainment does not categorically denote professionalism, but it is presumed that economic development directors with higher levels of education may be more informed about economic development methods and progressive telecommunications technologies. Those persons with university or college degrees may also have better connections to experts in the

field of economic development and telecommunications. The respondents were asked, "What is the highest level of education you have completed, including college, vocational or technical training?". Categories were recoded to: high school = 1; some college or post-secondary = 2; college degree = 3; post graduate = 4. The one respondent in the "less than high school" category, was included in the high school diploma/GED category. The average level of educational attainment was 14.8, indicating that the average economic development director has a 4 year college degree or more. Thirty-five respondents (16.9%) were in the high school category. Fifty-five (26.6%) had completed some college or post secondary education. Seventy-six (36.7%) had a four year college degree, and forty-one (19.8%) had completed some post-graduate work or had an advanced degree.

Community of limited liability theorists have shown length of community residence to be a determinant of community involvement. Years of residence in the community is used to examine this relationship. The respondents were asked "How many years have you lived in this local area? (YCOMM: See Appendix One). Responses ranged from 1 - 73 years, with a mean of 26.4, indicating that many respondents had lived in the community for many years, so it can be assumed that they are very knowledgeable about their communities. Approximately one-fourth of the respondents had lived in the area fewer than 10 years. About one-fourth had lived in the area between 10 and 24 years, and the remaining 50 percent had lived in the area 25 years or more.

To test the hypothesis of a positive relationship between satisfaction with local services and interaction between the economic development organization and local telephone company, a scale was constructed from responses to a series of questions dealing with the respondents' satisfaction with the services provided by the local telephone company. As Ayres and Potter found (1989:12) "...the more positively leaders felt about services in the community, the more interest they had in getting involved in the community". Respondents were asked to rate the local telephone company on its provision of the following services: quality of voice transmission, capacity to rapidly transmit data as well as voice messages, dependability of equipment, introduction of innovative telephone services to the community, competitiveness of rates, and ability to envision future telecommunications needs of the community. Responses range from 1 = poor to 10 = excellent. Table 3.4 presents the mean, range, and standard deviation for each of these variables. Respondents rated their telephone companies highest on quality of voice transmission (mean = 8.02) and lowest on introduction of innovative services to the community (mean = 5.78).

The respondents' scores on these questions were summed to create a scale that measures their satisfaction with local telecommunication services. The scale has a potential range of 1 - 70, with higher scores indicating more satisfaction with local telecommunications services. The scores ranged from a low of 7 to a high of 70. The mean score was 48.48 and the standard deviation was 15.41. This

Table 3.4 Ranges, means, and standard deviations for items included in the satisfaction with local telephone services scale (Satisfy)

Item	Range	Mean	Standard Deviation
<u>Q6a</u> quality of voice transmission	1-10	8.02	1.96
<u>Q6b</u> capacity to rapidly transmit data	1-10	7.58	2.22
<u>Q6c</u> dependability of equipment	1-10	7.93	2.17
<u>Q6d</u> introduction of innovative telephone services	1-10	5.78	3.06
<u>Q6e</u> service to customers	1-10	7.18	2.44
<u>Q6f</u> competitiveness of rates	1-10	6.56	2.57
<u>Q6g</u> ability to envision future telecommunication needs	1-10	6.11	3.02

Cronbach alpha = .94

variable has been labeled "satisfy". A test of inter-item correlation to determine reliability of the scale resulted in an alpha coefficient of .94.

Additionally, respondents were asked "Do you feel that the telecommunication services provided by your local telephone company are generally an asset, a liability, or irrelevant in attracting new companies and businesses to your local area?" (Q8). Responses were recoded with Asset = 2; Irrelevant = 1; and Liability = 0. The majority consider their telephone company an asset (144 or 70.2%). One-fifth of the respondents felt the telephone company was irrelevant to their economic development activities (41, or 20.0%). Almost 10 percent believe the telephone company is a liability (20, or 9.8%). These two

variables, “Satisfy” and “Asset” are examined individually as factors affecting the interaction patterns between the economic development organizations and local telephone companies.

Economic development personnel attitudes about the importance of telecommunications for economic development presumably would impact the amount of interaction with the telephone company. Ayres and Potter (1989:13) stated: “The attitudes of residents and leaders toward change in the community are believed to play a very important part in determining the types of social action undertaken in the community...”. The speed at which telecommunications technologies are changing is even more reason why resistance to change may be a barrier for effective economic development.

A scale to measure the economic development leaders’ perceptions of how important telecommunications technologies are for rural development was constructed by summing responses to a series of survey questions. Respondents were questioned about their perceptions of the importance of telecommunications for fourteen economic development and quality of life considerations (Q24a - Q24n). These items included questions about the importance of telecommunications for the following economic development and quality of life considerations: job creation, good paying jobs, establishment of new businesses, quality of working conditions, profitability of businesses, business retention and expansion, recruitment of new industries and businesses, volume of retail trade, creation of home-based businesses, future growth of the local economy, educational services, medical

services, library services, and entertainment and recreation. Response categories were recoded; Not Important = 0; Somewhat Important = 1; and Very Important = 2.

Overall perception of the importance of telecommunications for local economic development was measured with responses to the following question: "How important are telecommunications technologies for local economic development?" (Q26). Response categories were reverse coded: of little, or no importance = 0; useful, but not essential = 1; and absolutely essential = 2.

Scores for the perception scale were derived by summing responses to these questions. Higher scores indicate more positive opinions toward telecommunications as an economic development tool. Table 3.5 summarizes the items included in the "perceptions of importance of telecommunications' scale. This variable has been labeled "percept", and contains a potential range of 0 - 30. The mean score for this variable was 21.21, with a standard deviation of 4.95. The lowest score was 9 and the highest score was 30. A test for inter-item correlation resulted in a Cronbach alpha coefficient of .87.

The highest mean score was for educational services, indicating that economic development professionals believe telecommunications technologies can be most useful for enhancing educational opportunities. A high mean score for medical facilities suggests that they also believe health services can be improved through the use of telecommunications. Almost all the variables were rated as at least somewhat important, implying that most economic development leaders anticipate some benefits from telecommunications technologies.

Table 3.5 Frequencies for items included in the perception of telecommunications scale (Percept)

Economic development issue		Frequencies		
		0 (Not)	1 (Somewhat)	2 (Very)
<u>Q24a</u>	job creation	7	97	103
<u>Q24b</u>	good paying jobs	3	77	127
<u>Q24c</u>	establishment of new businesses	1	107	99
<u>Q24d</u>	quality of working conditions	26	132	42
<u>Q24e</u>	profitability of businesses	5	100	100
<u>Q24f</u>	business retention and expansion	3	105	97
<u>Q24g</u>	recruitment of new industry and businesses	2	88	115
<u>Q24h</u>	volume of retail trade	46	121	37
<u>Q24i</u>	creation of home-based businesses	17	73	110
<u>Q24j</u>	future growth of the local economy	6	97	104
<u>Q24k</u>	educational services	0	33	174
<u>Q24l</u>	medical services	5	42	157
<u>Q24m</u>	library services	7	99	100
<u>Q24n</u>	entertainment and recreation	42	135	28
<u>Q26</u>	local economic development	3	108	95

Cronbach alpha = .87

An additional variable related to perception was included in the analysis. There is a continuing debate about whether telecommunications will narrow or widen the economic gap between rural and urban communities. The opinion of the economic development leaders in this debate would seemingly have some impact on their attempts to include the telephone company in economic development activities. Respondents were asked: "How do you think these technologies are likely to affect the economic gap between this state's rural and urban communities?" (Q25). Responses were recoded to: Narrow the gap = 2; Have little or no effect = 1; and Widen the economic gap = 0. It is apparent from the responses to Q25 that the majority of economic development professionals believe that telecommunications are important to their work. Most (136, or 65.7%) believe that telecommunications will narrow the economic gap between rural and urban communities. Equal numbers of respondents believed that telecommunications will likely create a wider gap (33, or 15.9%), or that they will have little or no effect (33, or 15.9%).

One additional independent variable included in the study is population of the community. The community's population is included to determine if smaller communities are at a disadvantage due to lack of resources. Size of community may be an important determinant of successful development programs. Lapping, Daniels, and Keller (1989) point out that small communities face several obstacles for economic development. Some of the factors inhibiting economic growth include lack of local markets, a largely unskilled labor force, and location barriers that result in increased transportation costs. Additionally, recent trends toward consolidation of

rural markets have made it more difficult for rural businesses to survive, increasing numbers of young people leave town, and many communities are left with dwindling tax bases. Particularly among the very small communities, economies of size may prevent them from hiring professional staff, or having a sufficiently large pool of volunteers. Very small communities may also tend to believe they are not capable of utilizing telecommunications technologies.

Population size for the communities in the sample ranged from 159 residents to 24,629, with an average size of 2,875. 1994 estimates of the general population were used. Community size was not categorized for the analysis, but to provide a clearer picture of the distribution, the size of communities in the population sample is summarized in the following categories:

- 100 - 1000 (31%)
- 1,001-2,000 (29%)
- 2,001 - 3,000 (15%)
- 3,001-5,000 (7%)
- 5,001-7,000 (8%)
- 7,001 and 10,000 (6%)
- 10,001 -25,000 4%

3.5 Control Variable

From the literature on absentee ownership, and more specifically from literature about the telephone industry, it is inferred that interaction between the

economic development organizations and telephone companies will be greater in communities served by locally owned, independent telephone companies than in those served by corporate, absentee owned telephone companies. The community of limited liability theory purports that community involvement is greater among those who have a larger investment in the community. Telephone company investments in communities served by a locally owned, independent telephone company are proportionally higher than in communities with corporate telephone companies who serve hundreds of communities. These independent companies have a greater stake in the local community because their revenues are dependent upon strong local economies (Galston, 1995). El-Ghamini (1995) asserts that independent, rural telephone companies have a symbiotic relationship with the communities they serve. It is in the best interest of the local telephone companies to encourage investments in the community, just as it is in the best interest of the community to encourage the success of the local telephone company. In addition to investment in system upgrades, independent, rural telephone companies are more likely to be involved in and supportive of local activities and community needs such as educational and medical systems (Galston, 1995). Therefore, it is assumed that interaction between the economic development organizations and telephone companies will be greater in communities served by locally owned telephone companies.

In this study, telephone company ownership was identified as (1) independent, locally owned company, or (2) corporate, absentee owned company.

The study sample consisted of 62 communities with companies independent, locally owned telephone companies and 145 communities with corporate, absentee owned companies.

3.6 Statistical Procedures

Relationships between the variables were examined using tests for correlation, independent sample t-tests, and multiple regression. Zero-order Pearson correlations were computed to statistically measure the strength and direction of relationships. Multiple regression analysis was conducted to estimate values of the dependent variables using a set of independent variables as predictors. Multiple regression will help explain variability in the dependent variables by exploring the proportion of variability that can be explained by the independent variables. Regression statistics also show the effects of each variable controlling for the effects of the other variables. Separate procedures were conducted on data from communities with (1) independent, locally owned telephone companies, and (2) corporate, absentee owned telephone companies. The independent sample comparison of means tests was conducted to test hypotheses 3 and 4; comparison of means for interaction and satisfaction with local services was computed with telephone company ownership as the control variable.

Statistical procedures were conducted using the Statistical Package for Social Sciences (SPSS for Windows, Version 6.1.2).

CHAPTER FOUR. RESULTS AND DISCUSSION

4.1 Zero-order Correlations

Zero-order correlations were computed, dividing the sample into communities served by independent, locally owned telephone companies and communities served by absentee owned telephone companies. The significance level was set at .05. The correlations among communities served by independent companies are presented in Table 4.1, and the correlations among communities served by absentee owned companies are presented in Table 4.2. Correlations between the three measures of interaction are not included in the tables; they were found to be significantly correlated for the total sample (Interact and Leader, $r = .77$; Interact and Finance, $r = .65$; Leader and Finance, $r = .82$).

The first hypothesis: levels of interaction between economic development organizations and local telephone companies are positively related to the perception of importance of telecommunications for economic development, was not supported by any of the correlations. Perception of the importance of telecommunications does not appear to impact community interaction levels. None of the correlations between the perception variables and the three dependent variables are significant at the .05 level. It is clear that economic development leaders are aware of the importance of telecommunications; over one-half of the scores on the perception scale were 20 or higher out of a possible 30 points. These scores indicate a general perception among development leaders that

Table 4.1 Zero-order correlations among the variables (Locally owned companies)

	1	2	3	4	5	6	7	8	9
1. Populate									
2. Hours	.57 ***								
3. Plan	.09	.08							
4. Educ	.17	.13	.15						
5. Ycomm	-.21	-.17	-.20	-.39 **					
6. Satisfy	-.02	.00	.09	.14	-.14				
7. Asset	.14	-.04	.14	-.07	.08	.24			
8. Percept	.11	.30 *	.14	-.22	-.03	-.06	.12		
9. Gap	.29*	.16	.10	.06	.01	-.02	-.03	.21	
10. Interact	.20	.28 *	.11	.23	-.16	.44 ***	.31 *	.21	.09
11. Leader	.11	.02	.21	.01	-.02	.45 ***	.52 ***	.11	.04
12. Finance	.19	.19	.21	.05	-.07	.32 *	.39 **	.23	.01

* $p < .05$; ** $p < .01$; *** $p < .001$

telecommunications can improve the future economic health of rural communities, but that does not seem to motivate cooperative action with local telephone companies.

The second hypothesis: levels of interaction are positively related to satisfaction of local telecommunications services was supported across all measures, for both independent and corporate companies. The variable measuring

satisfaction with local telecommunications services is significantly correlated to all three dependent variables for both independent and corporate companies. This is consistent with the literature that suggests a positive relationship between satisfaction with local services and active community involvement (Ayres and Potter, 1989).

Table 4.2 Zero-order correlations among the variables (Absentee owned companies)

	1	2	3	4	5	6	7	8	9
1. Populate									
2. Hours	.50 ***								
3. Plan	.36 ***	.43 ***							
4. Educ	.27 **	.03	.06						
5. Ycomm	-.34 ***	-.26 **	-.16	-.26 **					
6. Satisfy	.13	.07	.09	-.01	.10				
7. Asset	.08	.00	.06	-.04	.17	.49 ***			
8. Percept	.05	.19 *	.19 *	-.07	-.06	-.03	.00		
9. Gap	.15	.14	.15	.17 *	-.07	-.07	-.04	.25 **	
10. Interact	.26 **	.26 **	.24 **	.03	-.08	.31 ***	.22 **	.13	.10
11. Leader	.26 **	.12	.16	-.03	-.06	.53 ***	.33 ***	.10	.09
12. Finance	.39 ***	.24 **	.17	-.06	-.02	.39 ***	.29 **	.15	.09

* p < .05; ** p < .01; ***p < .001

Although both are strong positive correlations, the relationship between satisfaction with services and the interaction scale is stronger in communities with locally owned, independent telephone companies than it is in communities with absentee owned, corporate companies (Locally owned, $r = .44$; Absentee owned, $r = .31$).

The opposite is true for the correlations between the satisfaction scale and the leadership and financial support variables. Stronger correlations between satisfaction with services and leadership and financial support are found in communities with absentee owned companies. A similar relationship is found in the correlations between "Asset" and the dependent variable measures, indicating that interaction is greater in the communities where the economic development leaders consider the telephone company an asset to the community. Positive correlations are observed for both locally owned and absentee owned companies, with stronger relationships found for the locally owned companies.

A few significant correlations are found between the variables identified as characteristics the economic development organizations ("Hours", and "Plan") and the dependent variables. The only significant correlation in the locally owned companies (Table 4.1), is a relationship ($r = .28$) between the hours devoted to economic development activities ("Hours") and the interaction scale ('Interact').

In absentee owned companies (Table 4.2), a moderately strong, positive relationship is found between hours devoted to development activities and both the interaction variable ($r = .26$) and the perceived financial support of the telephone

company ($r = .24$) There also is a significant correlation between the existence of a written plan and interaction for the absentee owned companies ($r = .24$). There is a positive relationship between having a plan and the perception of financial support by the telephone company, but this relationship is weaker ($r = .17$). None of these relationships are significant in respect to the perceived leadership of the telephone company.

Size of community (Populate) is positively correlated with the dependent variables only for the absentee owned companies. This lends additional support to the literature that suggests that corporate controlled telephone companies tend to bypass the needs of the most rural communities in favor of more lucrative markets. Corporate telephone companies serve communities in all population categories; these correlations indicate that they are more willing to be active participants in the economic development activities of the larger communities.

Contrary to community of limited liability theory, the number of years that the economic development directors had lived in the community shows no correlation to any of the dependent variables. Although years in the community is not correlated with any of the dependent variables, it is significantly correlated with several of the independent variables in the absentee owned companies. Negative correlations were found between years that these economic development directors had lived in the community and size of community ($r = -.34$), hours devoted to economic development activities ($r = -.28$), education level ($r = -.34$), and existence of a written plan ($r = -.17$). These findings suggest that larger communities are more likely to

have professional economic development personnel, while smaller communities are more likely to rely on volunteer community leaders. This reinforces the need for smaller communities to enhance their economic futures by cooperating in efforts to provide telecommunications technologies.

4.2 Summary of Correlations

No significant relationships were found between perceptions of the importance of telecommunications and measures of interaction between the developers and the telephone company, thus hypothesis 1 that levels of interaction are positively related to perceptions of the importance of telecommunications is not supported. The most significant findings in the correlations tests are the strong positive relationships between the measures of interaction and the measures of satisfaction with local telephone services lending support for hypothesis 2.

The community of limited liability theory of a relationship between length of residency and community involvement was not supported by any correlations.

Several of the correlations begin to suggest differences in the interaction patterns of communities served by locally owned, independent companies and those in communities served by corporate companies. The most important in regards to this study is the impact that size of community has on interaction patterns. Community size appears to make no difference in communities served by locally owned, independent companies. Conversely, in communities served by

absentee owned, corporate companies, larger communities appear to have higher levels of interaction.

The next step in the analysis was to examine the differences in satisfaction with services between communities served by locally owned telephone companies and communities served by corporate telephone companies. This is done to test the community of limited liability theory that community participation is greater among those who have more invested in the community. Independent samples t-tests were conducted to compare the means of the satisfaction variables and the interaction variables between communities with locally owned telephone companies and communities with corporate telephone companies.

4.3 Independent Sample t-tests

Independent sample t-tests were conducted to explore the differences in interaction patterns between communities with locally-owned telephone companies and those with absentee owned companies. Hypothesis 3: level of satisfaction of telecommunications services is positively related to local ownership of telephone companies, and Hypothesis 4: level of interaction between the economic development organizations and telephone companies is positively related to local ownership of the telephone company, are explored using comparisons of means tests for independent samples. The results are very indicative of the significance of local ownership in predicting cooperation and communication between the

economic development organizations and telephone companies. Table 4.3 presents the results of the test for hypothesis 3.

The comparisons of means tests reveals strong support for hypothesis 3, that satisfaction with services is positively related to local ownership of the telephone company. Scores on the satisfaction scale were 35% higher in communities with locally owned, independent telephone companies than in communities with corporate telephone companies. Literature from previous research linking satisfaction with local services to local community involvement has been supported in this study. It has been shown that economic development leaders who are more satisfied with the services provided by the local telephone company, have more frequent interaction with the telephone company. Community interaction is a prerequisite to social capital and a ongoing attribute of mutual trust and cooperation

Table 4.3 Comparison of means test for satisfaction with telecommunications services (Locally owned versus absentee owned telephone companies)

Telephone company ownership		Satisfy	Asset
Local telephone companies	Mean	60.00	1.92
	Number	62	62
	St.Dev.	7.68	0.28
Absentee telephone companies	Mean	39.28	1.47
	Number	145	145
	St.Dev.	13.61	0.73
	t-value	13.89	6.41
probability		< .0005	< .0005

for the achievement of common goals. It follows from this that communities served by locally owned, independent telephone companies have a greater amount of social capital available to them. Since it is commonly agreed that communities with greater amounts of social capital are more successful at achieving goals, it seems likely that rural communities served by locally owned, independent telephone companies will have more success at incorporating telecommunications into development programs aimed at improving their economic stability.

The final hypothesis states that interaction levels will be higher in communities served by locally owned telephone companies. Literature on absentee ownership (Schulze, 1958; Tilly, 1974; Fitzgerald & Meyer, 1986; Meek, 1988) suggests that this will be true. Table 4.4 presents the comparison of means test for differences in all three measures of the dependent variables. Mean scores for all measures were higher in communities served by independent telephone companies.

Hypothesis 4 is supported by this comparison of means. Interaction scores were more than 75% higher in communities served by independent telephone companies. Perceived leadership is 57% higher, and perceived financial support is 52% higher in these communities.

In addition to lending support to the literature on absentee ownership, and its relevance to the structure of the telephone industry, this study has demonstrated the applicability of the community of limited liability theory. Although no support was found for the relationship between length of residency and community

Table 4.4 Comparison of means test for variables measuring interaction patterns (Locally owned versus absentee owned telephone companies)

Telephone company ownership		Telephone company leadership	Telephone company financial support	Interaction
Local companies	Mean	6.85	6.75	2.44
	Number	61	59	62
	St.Dev.	2.70	2.94	1.58
Absentee companies	Mean	2.91	3.21	0.59
	Number	139	135	145
	St.Dev.	2.44	2.88	0.95
	t-value	9.77	7.76	8.61
	probability	<.0005	<.0005	<.0005

involvement, there is a positive relationship found between local investment and community involvement. In previous community of limited liability studies, home ownership was used an indicator of local investment, and found to be a predictor of community involvement. In this study, ownership of the telephone company was the factor associated with local investment. This study has demonstrated the applicability of the community of limited liability theory in that local ownership of the telephone company has been shown to be a significant predictor of greater interaction between economic development organizations and telephone companies. Economic development leaders in communities with independent

telephone companies also tend to perceive higher levels of leadership qualities and financial support on the part of the local telephone company.

4.4 Multiple Regression Analysis

Multiple regression analysis was conducted to further test these relationships and assess the effects of each of the variables, controlling for effects of the other variables. The dependent variable used in all the models is the measure of interaction between the economic development organizations and the local telephone companies ('Interact'). Five regressions were run, first for the communities with locally owned telephone companies, and second for the communities with absentee owned companies. Regressions were run on four sets of related variables, with a final regression that included all the variables. Variables were categorized and entered into the regression models in the following method:

1. Community size
 - 'Populate'
2. Economic development organization characteristics
 - 'Hours' = hours devoted to economic development
 - 'Plan' = existence of a written plan for economic development
3. Personal characteristics
 - 'Educ' = highest level of educational attainment
 - 'Ycomm' = years of community residency
4. Attitudes about telecommunications and local services
 - 'Satisfy' = satisfaction with local telephone services
 - 'Asset' = recognition of local telephone company as an asset, liability, or irrelevant to economic development needs
 - 'Percept' = perception of the importance of telecommunications for rural economic development

-- 'Gap' = opinions about the impact of telecommunications on the economic gap between rural and urban economic stability

5. Full model (Total) includes all the variables

Table 4.5 presents the regression analysis for communities with locally-owned, independent telephone companies. The regressions for communities with absentee owned, corporate telephone companies are presented in Table 4.6.

In both analyses, the only variable with a statistically significant relationship to interaction is the scale measuring satisfaction with local services. This supports Hypothesis 3 that levels of interaction are positively related to satisfaction with local services. Perception of the importance of telecommunications for economic development are again shown to have no relationship to interaction patterns.

There is no support found for the portion of the community of limited liability theory that asserts that length of residency affects community involvement. It should be mentioned however, that there is a potential limitation to this assessment, since the only measure of community involvement in the analysis is interaction with one other community organization. Nonetheless, there are indications that length of residency has no impact on interaction patterns.

These variables taken together explain more variance in the interaction patterns in communities with locally owned telephone companies. Thirty-seven percent of the variation ($R^2 = .37$) is explained in the full model for local companies, while 24 percent is ($R^2 = .24$) explained for communities with absentee owned telephone companies.

Table 4.5 Regression models for factors influencing interaction between development organizations and local telephone companies (Locally owned companies)

	1	2	3	4	5
Community Characteristics					
Populate	.00				.00
Economic Development Characteristics					
Hours		.07 *			.07
Plan		.29			-.18
Personal Characteristics					
Educ			.30		.21
Ycomm			-.01		-.01
Attitudes					
Satisfy				.08 *	.07 *
Asset				1.16	1.36
Percept				.04	.04
Gap				.16	-.04
	R ² = .04 df = 1, 59 p > .05	R ² = .08 df = 2, 58 p > .05	R ² = .06 df = 2, 59 p > .05	R ² = .26 df = 4, 55 p < .05	R ² = .37 df = 9, 48 p < .005

* p < .05

Table 4.6 Regression models for factors influencing interaction between development organizations and local telephone companies (Absentee owned companies)

	1	2	3	4	5
Community Characteristics					
Populate	.00***				.00
Economic Development Characteristics					
Hours		.01*			.01
Plan		.29			.23
Personal Characteristics					
Educ			.01		.00
Ycomm			.00		.00
Attitudes					
Satisfy				.02 ***	.02 ***
Asset				.06	.07
Percept				.02	.01
Gap				.13	.08
	R ² = .07 df =1, 143 p < .005	R ² = .09 df =2, 142 p < .005	R ² = .01 df =2, 142 p > .05	R ² = .14 df =4, 135 p < .001	R ² = .24 df =9, 130 p < .001

* p < .05; ***p < .001

4.5 Discussion

All of these statistical analyses lead to the conclusion that local ownership of telephone companies does have an impact on the social capital component of economic development. Hypothesis 1: Level of interaction between economic development organizations and telephone companies is positively related to perceptions of the importance of telecommunications for economic development was not supported. Perceptions of the importance of telecommunications for economic development were found to be high for all respondents. There were no significant correlations between perceptions and any of the dependent variables.

Hypothesis 2: Level of interaction between economic development organizations and telephone companies is positively related to development personnel's satisfaction with local telecommunications services, was supported. The comparison of means test shows that satisfaction with local services is positively related to local ownership of telephone companies.

Hypothesis 3: Level of satisfaction of telecommunications services is positively related to local ownership of the telephone company was strongly supported. The comparison of means test shows the satisfaction with local telecommunications services is 33% higher among respondents in communities served by independent telephone companies than among those served by corporate telephone companies.

Hypothesis 4: Level of interaction between the economic development organizations and telephone companies is positively related to local ownership of

the telephone company received strong support.

Satisfaction with local services was found to be the most significant predictor of greater amounts of interaction, and local ownership of the telephone company was found to be a significant predictor of higher levels of satisfaction. These findings lead to the conclusion that the ownership structure of the telephone company is an important factor in successful efforts to incorporate telecommunications technologies into rural economic development programs.

CHAPTER FIVE. CONCLUSION

Society is rapidly transforming to an age in which information can be exchanged instantly. The definition of “community” is taking on new meanings as the information age progresses. Sharing residence within common geographical boundaries is no longer the only way communities are formed. Communities are created irrespective of distance through linking persons who share common interests via new forms of telecommunications. More and more people are acquiring e-mail addresses that make possible the development of new and expanded communities. Nevertheless, the local community remains important — people still have street addresses, neighbors, and needs that can only be met through the communion of those with whom one shares geographic space. The need for development programs that endeavor to improve the quality of life in communities of common space continues.

Rural communities have undergone significant economic downturns in recent decades, and most of them have found it necessary to find alternative economic strategies. The success of economic development programs depends to a great extent on the process through which they are implemented. Open lines of communication and cooperation are essential for the attainment of goals. As the transition to an information intensive society proceeds, the requisite infrastructure and skills to use new technologies becomes progressively more important.

Distance and isolation no longer need to be barriers for rural communities.

As these rural communities seek to improve their economic future, telecommunications holds some promise of optimism. The totality of the impacts of the "Information Age" on rural community culture and identity remain to be seen and understood, but it is becoming evident that telecommunications technology will be a necessary ingredient in their survival.

Telephone companies will play a major role in the provision of the technologies needed in rural communities. Therefore, including the local telephone company in economic development plans and activities should become a priority for rural community leaders. Parker and Hudson have made several recommendations to meeting the telecommunications needs of rural communities. One of those is that "...telephone carriers should provide local leadership for economic development programs in the communities they serve" (Parker & Hudson, 1992:227).

The objective of this study was to explore the interaction patterns between economic development organizations and telephone companies in rural Iowa communities. It was hypothesized that telephone company ownership (independent, local owned company or absentee owned, corporate company) may be a factor in explaining differences in the amount of cooperation and communication between the two organizations. These interaction patterns are important factors in the social capital available to communities. Social capital has been described as the ability of a community to act collectively to attain a common goal (Ryan, 1995). Social capital is therefore a community resource, and it holds considerable importance to successful economic development efforts (Anderson,

1990; Ryan, 1995; Burt, 1992; Flora & Flora, 1993, 1995) Social capital, along with physical, human, and financial forms of capital, is an essential ingredient in successful implementation of development programs.

It was argued that the community of limited liability theory may have some significance to explaining differences in the amount of social capital found in communities. Limited liability theorists have previously found that residential ownership and length of residency are positively related to a propensity toward community involvement. In this study, local ownership of the telephone company was considered similar to home ownership in the original community of limited liability literature. This study has demonstrated that the community of limited liability theory can be applied to rural communities in the "Information Age". Although length of residency was not found to be a significant predictor of interaction patterns, there was a strong relationship found between local ownership of the telephone company and interaction patterns. It was assumed that because they serve a small number of communities, locally owned telephone companies have a greater investment in the local area. Conversely, corporate, absentee owned telephone companies have a relatively small percentage of their investments in any one community. The community of limited liability theory was supported in the results of this study that found more interaction in the communities where the telephone company is locally owned. The communities with a locally-owned telephone company have higher levels of interaction and as a result, have stronger

social capital reserves, which should positively affect economic development programs.

Ayres and Potter's (1989) findings that satisfaction with local services is related to community involvement is supported in this study. The economic development leaders who are more satisfied with telecommunications services exhibit tendencies toward higher levels of community interaction. Additionally, this study found that economic development leaders are more satisfied with the telecommunications services offered by independent telephone companies. a finding consistent with others who have studied the effects of absentee ownership. Several people have criticized absentee owned, corporate telephone service providers because they tend to overlook their rural customers in favor of the more lucrative markets of urban centers (Galston & Baehler, 1995; Office of Technology Assessment, 1991; Sawhney, et al., 1991; El-Ghamrini, 1995). It is evident from these findings that local ownership of the telephone company may potentially impact the future economic vitality of rural communities.

Analysis of the data gathered in this study indicates that social capital, as exemplified by communication and cooperation between developers and telephone companies, is stronger in communities with locally owned, independent telephone companies. Because social capital is a significant factor in successful development programs, those communities served by locally owned telephone companies have an advantage for incorporating telecommunications technologies into their economic development plans.

5.1 Limitations of the Study

The sample population for this research was economic development leaders in Iowa communities with fewer than 25,000 residents. The major focus of the study was the examination of the interaction between these respondents and the telephone companies in their communities. Conducting this study in Iowa can be considered both positively and negatively. Iowa has 152 independent telephone companies, half again as many as any other state. On one hand, the structure of the telephone industry in Iowa allows for better comparison between local and absentee ownership of telephone service providers. But, it means also that generalizations to other states should not be made without additional research.

The distribution of the sample population of communities with locally owned, independent telephone companies versus those with absentee owned telephone companies was unequal (locally owned companies, $n = 62$, absentee owned companies, $n = 145$), which may mean that the analysis does not provide a true indication of the characteristics of locally owned telephone company communities. While this distribution is unequal, it should be noted that more Iowa communities are served by absentee owned telephone companies.

The survey respondents were selected because they were considered to be reliable representatives of the community's economic development programs. A more complete understanding could have been gained if the study also had included respondents from the telephone companies, but it can be assumed that interaction patterns were adequately reported by the economic development

leaders. Future research should attempt to integrate the telephone company perceptions of the importance of telecommunications in these rural communities.

One of the tenets of the community of limited liability theory is that length of residency is positively related to community involvement. In relation to economic developers, length of residency was found to be unrelated to community involvement. A limitation of this study is that only the economic development leader's length of residency was included. If the length of residency of the telephone company manager could have been included, a better understanding of this variable could have been achieved and a different conclusion may have been reached.

Telecommunications technologies are changing at unprecedented speeds and are constantly being adopted by a growing number of persons. Because of the rapid changes taking place, research on the impacts of telecommunications for rural economic development should continue.

5.2 Implications

Telecommunications technologies do not strengthen the local community in terms of enhancing internal communication; it has been found that communities commonly use telecommunications to increase external linkages, but few are using the technologies to provide internal networks within the community (Gregg, Abbott, & Korsching, 1996). While local linkages are important for the quality of life in communities, external linkages are important providers of information, new ideas,

and technical assistance (Warren, 1978). This thesis has stressed the importance of strong local linkages as a means of providing the capacity for increasing external linkages.

As the transformation to an "Information Age" progresses, it will become more important for rural communities to keep pace with improvements in telecommunications technologies. Those that do not are likely to experience difficulty in attracting new businesses and providing for the needs of current businesses and residents. It is apparent from this research that those communities with independent, locally owned telephone companies may have an edge on rural communities served by corporate, absentee owned telephone companies. This research has indicated that independent, locally owned telephone companies have more interest in the welfare of the local community and are more involved in the economic development efforts of those communities. This becomes increasingly important in an age of telecommunications divestiture. Outside investments in local resources may result in lower levels of local social capital and ultimately may result in a handicap for rural communities seeking to improve their economic stability. This is a real threat to some communities as deregulation increases competition and jeopardizes the stability of local ownership.

Communities with strong social capital are better prepared to practice development *of* their community. In the long run, this process-oriented approach to community development results in more sustainable economic development. Absentee ownership of any business is more related to development *in* a

community. Attention to local needs and the willingness to invest in improvements to meet those needs is often dependent upon a high rate of return. Rural communities, especially the smallest and most isolated of them, naturally provide a smaller (or negative) rate of return than can be realized in larger markets. These communities risk becoming insignificant concerns to absentee owned companies who have nothing to gain from supporting them. A lacunae of social capital in these communities is demonstrated by weaker patterns of interaction between two important economic development actors, the economic development organization and the telephone company. This is not to suggest that communities served by corporate telephone companies are devoid of social capital, but in terms of taking advantage of benefits to be gained from telecommunications, this study has shown that those communities have lower levels of social capital in terms of weaker linkages and working relationships between economic development leaders and the local telephone service provider.

The community of limited liability results when investments in the community are dispensable. One of the consequences of the community of limited liability is lack of involvement in the local community. A strong base of local participation is a necessary ingredient in economic development programs. Many opportunities for economic growth can be lost without the support and participation of the local population. Allegiance to the local community has been shown to be greater among those who have more substantial investments in the community. As telecommunications technologies make external ties more accessible, it is

conceivable that local communities will increasingly become communities of limited liability. But, if development programs intentionally work at maintaining and building social capital, there is reason to believe that they can provide the capacity for external linkages, while at the same time, improving the internal structures of the community.

5.3 Recommendations

State economic development leaders, local leaders and telephone companies share the responsibility for ensuring that rural communities are accorded the opportunity to participate in an information age. Development leaders in rural communities face several challenges in their efforts to improve the economic stability of the community. It is imperative that they become proactive in programs to include the use of telecommunications in their communities. The state requires that local economic development organizations have a written plan as a prerequisite for eligibility in state programs, but most communities have not discussed telecommunications in their plans. It is critical that these plans be updated to address telecommunications needs. The local telephone company can be a valuable resource for economic development organizations, and more intentional efforts at involving the telephone company should accompany economic development programs.

Developing the skills to use telecommunications technologies is as important as access to telecommunications infrastructure and hardware. In addition to the

requisite infrastructure, telephone companies can provide educational opportunities to increase awareness of telecommunications and assist community residents in acquiring skills to use the technologies. Community workshops and newsletters, along with personal consulting can provide support to community economic development endeavors.

State development organizations also should seek to increase awareness of the benefits that telecommunications can provide for development, through providing information and training for local development leaders, businesses, and residents. Rapid changes in telecommunications needs call for state level development programs that offer assistance to rural communities and advocate for rural access to the information highway.

Community and state leaders should regard locally owned, independent telephone companies as assets and strive to support and strengthen them. Policies that promote independent telephone companies should be encouraged. The future economic stability of rural communities may depend upon it.

Economic development is a complex process and it is generally agreed that it involves focusing on physical, financial, human and social forms of capital. This study has shown that ownership of financial and physical capital may very well increase the sense of ownership in the community's social capital.

APPENDIX ONE: THE QUESTIONNAIRE

The following portion of the survey includes all the questions used in this thesis. The survey is printed in the format in which it was administered.

NOTENG

Since we are wanting to talk to persons who are actively working in local economic development activities, I don't need to take any more of your time but thank you for your assistance.

[PAUSE; GOTO OUTCOME]

Q1

Approximately how many hours per week do you spend on local economic development activities?

_[Q1]_____ HOURS PER WEEK

PROBE: ON AVERAGE

Q2a

Does the development organization for which you work have a written plan that sets out goals, priorities, or policies for economic development?

1 = Yes

2 = No [GOTO TECH]

8 = DON'T KNOW [GOTO TECH]

DATE

When was this plan prepared or last revised?

_[date]_____

PROBE: Please enter four digits for the year.

If unsure ask for an approximate date.

DK 8888

REF 9999

Q2b

Are local telecommunication needs, or problems, discussed in this plan?

1 = Yes

2 = No [GOTO TECH]

8 = DON'T KNOW [GOTO TECH]

Q4

How much contact do you personally have with officials of @[phonecom] in planning and conducting economic development activities? Would you say this contact is very frequent, frequent, infrequent, or nonexistent?

- 1 = Very frequent
- 2 = Frequent
- 3 = Infrequent
- 4 = Nonexistent
- 8 = DON'T KNOW
- 9 = REFUSED

 Q5

The following questions will ask you to rate your local telephone company.

On a scale of 1 to 5, where 1 is "not involved" and 5 is "greatly involved," how involved is your local telephone company in your community's economic development efforts?

#[q5]_____

DK = 88
REF= 99

 Q6a

On a scale of 1 to 10, where 1 is "poor" and 10 is "excellent," how would you rate your local telephone company on its quality of voice transmission?

_#[q6a]_____

DK = 88
REF= 99

 Q6b

On a scale of 1 to 10, where 1 is "poor" and 10 is "excellent," how would you rate your local telephone company on its capacity to rapidly transmit data as well as voice messages?

_#[q6b]_____

DK = 88
REF= 99

Q6c

How would you rate your local telephone company on its dependability of equipment?

_[q6c]_____

PROBE: poor 1.....10 excellent
DK 88 REF 99

Q6d

How would you rate your local telephone company on its introduction of innovative telephone services to your community?

_[q6d]_____

PROBE: poor 1.....10 excellent
DK 88 REF 99

Q6e

How would you rate its service to customers?

_[q6e]_____

PROBE: poor 1..... 10 excellent
DK 88 REF 99

Q6f

competitiveness of rates?

_[q6f]_____

PROBE: local rates in comparison to other communities.
poor 1.....10 excellent
DK 88 REF 99

Q6g

How would you rate your local telephone company on its ability to envision future telecommunication needs of your community?

_[q6g]_____

PROBE: poor 1.....10 excellent
DK 88 REF 99

Q6h

willingness to take leadership in local economic development activities?

_#[q6h]_____

PROBE: poor 1.....10 excellent
DK 88 REF 99

Q6i

Willingness to financially support development activities that don't involve telecommunications, such as leadership development?

_#[q6i]_____

PROBE: poor 1.....10 excellent
DK 88 REF 99

Q7a

I am going to read you a list of innovative telephone services. Please tell me how important you think each of these services is in promoting economic development in @[TRIM(commun)]? Would you say it is very important, important, not too important, or not at all important?

	VI	I	NTI	NAAI	DK	REF
a. Three-way calling	1	2	3	4	8	9
b. Voice mail	1	2	3	4	8	9
c. Dedicated lines	1	2	3	4	8	9

Q7b

	VI	I	NTI	NAAI	DK	REF
d. Call waiting	1	2	3	4	8	9
e. Call forwarding	1	2	3	4	8	9
f. Cellular telephones	1	2	3	4	8	9
g. Public packet switching	1	2	3	4	8	9

PROBE: VI very important I important
 NTI not too important NAAI not at all
 important

Q7c

How important is...

VI I NTI NAAI DK REF

h. Extended Area Service

(EAS) 1 2 3 4 8 9

i. Teleconferencing 1 2 3 4 8 9

j. Videoconferencing 1 2 3 4 8 9

Q8

Do you feel that the telecommunication services provided by your local telephone company are generally an asset, a liability, or irrelevant in attracting new companies and businesses to your local area?

1 = Asset

2 = Liability [GOTO WHY2]

3 = Irrelevant [GOTO WHY3]

8 = DON'T KNOW [GOTO Q9]

9 = REFUSED [GOTO Q9]

WHY1

Why do you feel this way?

_[why1]_____

_[why1]_____

_[wh1]_____

[GOTO Q9]

Q22b

Again, on a scale of 1 to 5 where 1 equals "poor" and 5 is "excellent," how adequate do you think telecommunication services will be in your local area by the year 2000?

#[q22b]____ Rating

DK = 8

REF = 9

Q23a

Next, I am going to read you two statements, please indicate whether you strongly agree, agree, disagree, or strongly disagree with each of them.

Business owners and managers in your community have the skills to use new telecommunication technologies.

1 = Strongly agree

2 = Agree

3 = Disagree

4 = Strongly Disagree

8 = DON'T KNOW

9 = REFUSED

q23b

Business owners and managers in your community recognize the innovative applications of new telecommunication technologies.

1 = Strongly agree

2 = Agree

3 = Disagree

4 = Strongly Disagree

8 = DON'T KNOW

9 = REFUSED

Q24a

I am interested in the importance that you place on telecommunication technologies for the following economic development and quality of life considerations in your community.

How important are these technologies for..... are they not important, somewhat important, or very important?

	NI	SI	VI	DK	REF
a. Job creation?	1	2	3	8	9
b. Good paying jobs?	1	2	3	8	9
c. Establishment of new businesses?	1	2	3	8	9

Q24b

How important are these technologies for..... are they not important, somewhat important, or very important?

	NI	SI	VI	DK	REF
d. Quality of working conditions?	1	2	3	8	9
e. Profitability of businesses?	1	2	3	8	9
f. Business retention and expansion?	1	2	3	8	9
g. Recruitment of new industries and businesses?	1	2	3	8	9

Q24c

How important are these technologies for..... are they not important, somewhat important, or very important?

	NI	SI	VI	DK	REF
h. Volume of retail trade?	1	2	3	8	9
i. Creation of home-based businesses?	1	2	3	8	9
j. Future growth of your local economy?	1	2	3	8	9
k. Educational services?	1	2	3	8	9

Q24d

How important are these technologies for..... are they not important, somewhat important, or very important?

	NI	SI	VI	DK	REF
l. Medical services?	1	2	3	8	9
m. Library services?	1	2	3	8	9
n. Entertainment and recreation?	1	2	3	8	9

 Q25

There is mixed opinion about the likely impacts of new telecommunication technologies on economic development in Iowa's rural communities. How do you think these technologies are likely to affect the economic gap between this state's rural and urban communities?

Would you say they will...

- 1 = narrow
- 2 = have little or no effect
- 3 = or widen the economic gap
- 8 = DON'T KNOW
- 9 = REFUSED

 Q26

How important are telecommunication technologies for local economic development. Would you say they are....

- 1 = of little or no importance
- 2 = useful, but not essential
- 3 = or absolutely essential
- 8 = DON'T KNOW
- 9 = REFUSED

COMPNT

Of these 8 community components I just read, which one do you think is the most important for economic development in @[TRIM(commun)]?

_[compnt]_____

_[compnt]_____

PROBE: MOST IMPORTANT--RE-READ
LIST

Q28a

Next, we are interested in who has provided you with literature or materials, held workshops or short courses that you attended, or consulted with you about the potential of telecommunication technologies for economic development.

First, which of the following organizations provided you written materials about the new telecommunication technologies?

	YES	NO	DK	REF
a. Iowa Department of Economic Development		1	2	8 9
b. Community colleges		1	2	8 9
c. Iowa State University		1	2	8 9
d. University of Iowa		1	2	8 9
e. Other colleges or universities	1	2	8	9
f. Your local telephone company	1	2	8	9

Q28b

Have you attended workshops or seminars on these technologies held by the...

	YES	NO	DK	REF
a. Iowa Department of Economic Development		1	2	8 9
b. Community colleges		1	2	8 9
c. Iowa State University		1	2	8 9

d. University of Iowa	1	2	8	9
e. Other colleges or universities	1	2	8	9
f. Your local telephone company	1	2	8	9

Q28c

Have you been offered any personal consulting on the use of these technologies by the...

	YES	NO	DK	REF
a. Iowa Department of Economic Development		1	2	8 9
b. Community colleges		1	2	8 9
c. Iowa State University		1	2	8 9
d. University of Iowa		1	2	8 9
e. Other colleges or universities	1	2	8	9
f. Your local telephone company	1	2	8	9

Q29a

Are there any good examples in @[TRIM(commun)] where a telecommunication technology has contributed to economic development?

- 1 = Yes
 2 = No [GOTO Q30a]
 8 = DON'T KNOW [GOTO Q30a]
 9 = REFUSED [GOTO Q30a]

PROBE: statewide ICN, satellite transmission,
 enhanced telephone services, or
 networked computers

RAGE

Now, we are almost finished, I just have a few background questions.

How old were you on your last birthday?

_#[rage]_____

DK 888

REF 999

 YEARS

How many years have you worked in economic development?

_#[years]_____

PROBE: Round up- any community

DK 888

REF 999

 YCOMM

How many years have you lived in this local area?

_#[ycomm]_____

PROBE: total years

less than 1 year round up

DK 888

REF 999

 EDUC

What is the highest level of education you have completed, including college, vocational, or technical training?

_#[educ]_____

PROBE: if less than high school please enter the grade level.

Less than high school

12 High school diploma/GED

13 Some college or post-secondary

16 College degree

17 Post-graduate work but not a degree

18 M.S. or above

APPENDIX TWO: HUMAN SUBJECTS APPROVAL FORM

Last Name of Principal Investigator

Konisching

Checklist for Attachments and Time Schedule

The following are attached (please check):

12. ☒ Letter or written statement to subjects indicating clearly:

- a) purpose of the research
- b) the use of any identifier codes (names, #'s), how they will be used, and when they will be removed (see Item 17)
- c) an estimate of time needed for participation in the research and the place
- d) if applicable, location of the research activity
- e) how you will ensure confidentiality
- f) in a longitudinal study, note when and how you will contact subjects later
- g) participation is voluntary; nonparticipation will not affect evaluations of the subject

13. ☐ Consent form (if applicable)14. ☐ Letter of approval for research from cooperating organizations or institutions (if applicable)15. ☒ Data-gathering instruments

16. Anticipated dates for contact with subjects:

First Contact

Last Contact

March 20, 1995June 1, 1995

Month / Day / Year

Month / Day / Year

17. If applicable: anticipated date that identifiers will be removed from completed survey instruments and/or audio or visual tapes will be erased:

July 1, 1995

Month / Day / Year

18. Signature of Departmental Representative _____ Date _____ Department or Administrative Unit _____

3/10/95Sociology

19. Decision of the University Human Subjects Review Committee:

☒

Project Approved

☐ Project Not Approved☐ No Action RequiredPatricia M. Keith

Name of Committee Chairperson

3/15/95

Date

Signature

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ACKNOWLEDGMENTS

There are numerous people who have supported and encouraged me through this process..... too many people to list individually, but to all my friends who have given me words of encouragement, I thank you. I want to especially acknowledge the support and guidance of Dr. Peter Korsching, whose patience and support over the last two years have made this possible. And to the other members of my graduate committee, Dr. Paul Lasley and Jerry Knox.... thank you for serving on my committee and inspiring me to pursue this degree. Thank you to Dr. Gordon Bultena, who was instrumental in the writing of the survey and to Teresa Warren, Secretary, Department of Sociology.

I would also like to thank Jennifer Gregg and Melody Ramsey, Graduate Students, Department of Journalism and Mass Communication, for a lot of good memories of the last two years. A special thank you to Marilyn Magnuson, a friend and fellow graduate student without whose support, this would have been much more difficult. And to Mike Orgler, who was always willing to help and taught me that I could become computer literate.

And finally, to my children, Heather and Nathan. You have both been very patient and supportive and I thank you for cooperating and allowing this to become a reality. I love you.